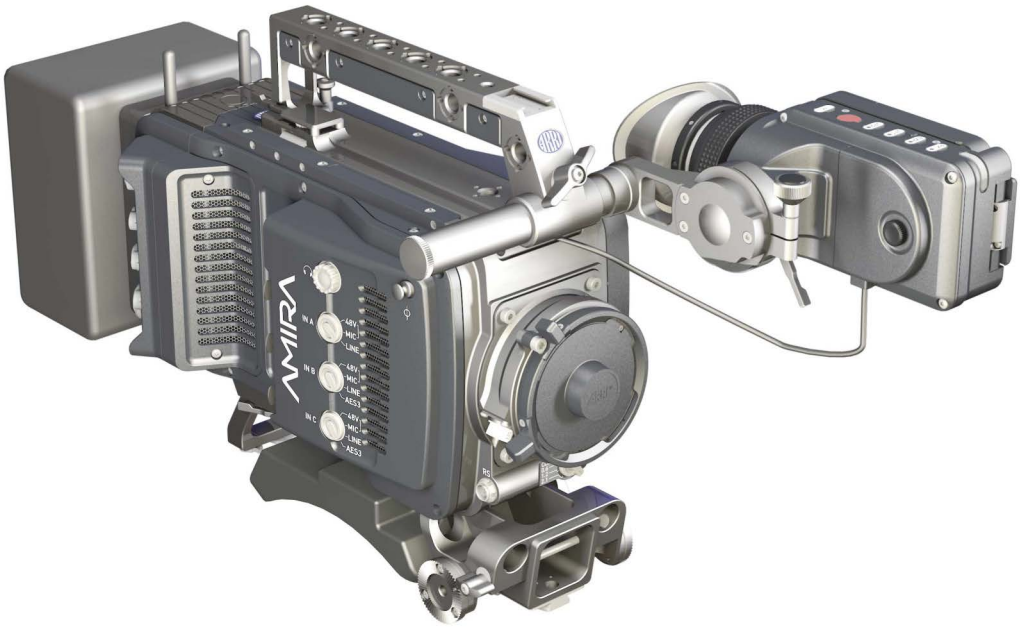
AMIRA

QUICK GUIDE

7 June 2016



Imprint

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Original version.

NOTICE

This document is a Quick Guide only. For detailed operation instructions, please refer to the User Manual.

For further assistance

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1 For your safety / 为了您的安全

Before use, please ensure that all users comprehensively read, understand, and follow the instructions in this document. / 使用前，请确保所有的用户都已经阅读、理解，并遵循本文档内的操作说明。

1.1 Risk levels and alert symbols / 危险级别和警示标志

Safety warnings, safety alert symbols, and signal words in these instructions indicate different risk levels:

⚠ DANGER!

DANGER indicates an imminent hazardous situation which, if not avoided, **will result in** death or serious injury.

⚠ WARNING!

WARNING indicates a potentially hazardous situation which, if not avoided, **may result in** death or serious injury.

⚠ CAUTION!

CAUTION indicates a potentially hazardous situation which, if not avoided, **may result in** minor or moderate injury.

NOTICE

NOTICE explains practices not related to physical injury. No safety alert symbol appears with this signal word.

Note: Provides additional information to clarify or simplify a procedure.

本文档内的安全警告、安全警示标志和标识词语指示不同的危险级别：

⚠ 危险

危险表示危急、有危害的情景，若不防范，则会导致死亡或严重的伤害。

⚠ 警告

警告表示有潜在危害的情景，若不防范，则可能会导致死亡或严重的伤害。

⚠ 小心

小心表示有潜在危害的情景，若不防范，则可能会导致中等或较轻的伤害。

提示

注意表示此行为不会导致人身伤害。因此此标识词语中不含警告标志。

注：注意中会提供用于解释或简化工作的额外信息。

1.2 Vital precautions / 重要安全措施

⚠ DANGER!

High voltage! Risk of electric shock and fire!

Short-circuits may entail lethal damage!

Before use, read and follow all valid instructions.

Use solely and exclusively as described in the instructions.

Never open. Never insert objects.

For operation, always use a power source as indicated in the instructions.

Always unplug the power cable by gripping the power plug, not the cable.

Never try to repair. All repair work should be done by a qualified ARRI Service Center.

Never remove or deactivate any safety equipment (incl. warning stickers or paint-marked screws).

Always protect from moisture, cold, heat, dirt, vibration, shock, or aggressive substances.

Never cover any fan openings.

⚠ 危险

高电压！有触电或起火风险！

短路将引起致命危险。

使用之前，请仔细阅读所有未过期的使用说明，并严格遵循。

切勿打开机身。切入插入任何物体。

操作时，请务必使用说明中指出的电源。

断开电源时请握住电源插头，而不是电线。

切勿尝试自行维修。所有的维修工作必须由具备资质的ARRI 维修中心进行。

切勿移除或毁坏任何安全设施（例如警告贴纸或涂漆标示的螺丝）。

务必避免潮湿、寒冷、炎热、多尘、震动、冲击或严酷的使用环境。

切勿覆盖任何风扇开口。

⚠ CAUTION!

Condensation! Risk of electric shock and fire!

Condensation may form on the sensor and electrical connections when exposing the camera to sudden changes of temperature or humidity!

To avoid injury and damage, never operate the camera when condensation occurs.

⚠ 小心

冷凝！有触电或火灾风险！

当将摄影机暴露于温度或湿度迅速变化的环境中时，影像传感器和电子部件连接处可能会产 为了您的安全 6 生的冷凝。

为了避免受伤或设备损坏，在冷凝发生时切勿操作摄影机。

⚠ CAUTION!

Heavy weight! Risk of injury and damage!

If placed on an unstable surface, the camera can fall and cause serious harm!

Always place the camera on proper support devices. Safely attach it as described in the instructions.

⚠ 小心

设备重量较大！有受伤或设备损坏风险！

若安置于不稳定的位置，则摄影机可能会掉落，并造成严重的伤害。

务必将摄影机安装于适当的支撑设备上。请按照说明中所描述的方法来安全地安装摄影机。

1.3 General precautions / 般安全措施

NOTICE

Even rugged cameras use components sensitive to improper use.

Always unplug the camera from power sources before making changes to the setup or system (in particular: changing cables).

Direct sunlight can result in camera housing temperatures above 60 °C (140 °F). At ambient temperatures above 25 °C (77 °F), protect the camera from direct sunlight.

Protect the optical system and sensor: Never point the camera or viewfinder into direct sunlight.

Avoid permanent sensor damage: Never let any direct light or reflections from high-energy light sources (e.g. laser beams) enter the camera's optical path.

Protect the sensor: Always keep a lens or protective cap on the empty lens mount. Change lenses in dry, dust-free environments only.

Always clean the sensor cover glass according to ARRI instructions.

Only use the tools, materials and procedures recommended in this document. For the correct use of other equipment, see the manufacturer's instructions.

提示

即使本摄影机非常坚固，也是由敏感的组件所组成的，请谨慎使用。

当改变摄影机安装支撑设备或系统时（特别是更换电缆），请务必断开摄影机电源。

注意保护光学系统和影像传感器：切勿将摄影机或取景器直接面朝直射阳光。

避免对影像传感器造成永久性伤害：切勿让任何来自高能量光源（例如激光）的直射光或反 射光进入摄影机的光路系统。

注意保护影像影像传感器：空镜头卡口上务必安装镜头或保护盖。更换镜头时，务必在干燥、 无尘的环境中进行。

请完全并仅按照用户手册中所描述的方法来清洁影像传感器保护玻璃。若清洁不成功，请咨 询ARRI 维修中心。切勿尝试打开保护玻璃。

清洁影像传感器保护玻璃时，务必遵守ARRI说明书中描述的方法。

仅使用本文档中建议使用的工具、材料和操作方法。若要正确地使用其他设备，请参阅其制 造商的说明书。

2 Audience and intended use

NOTICE

The product is solely and exclusively available for commercial costumers and shall be used by skilled personnel only. Every user should be trained according to ARRI guidelines.

Use the product only for the purpose described in this document. Always follow the valid instructions and system requirements for all equipment involved.

The AMIRA is a 35 mm digital camera solely and exclusively for recording HD 1080, 2K, 3.2K* or 4K UHD* images suitable for a variety of distribution formats:

- ProRes 422 LT, ProRes 422, ProRes 422 HQ*, ProRes 4444*, ProRes 4444 XQ*, MPEG-2 HD 422* codecs
- REC 709 encoding (through use of look files) or Log C* encoding
- CFast 2.0 card recording
- Up to 200 fps* in HD/2K with full image quality
- 35 mm CMOS sensor
- EVF with OLED eyepiece
- Fold-away monitor for both live view and user interface access
- Ready out-of-the-box for single-user-centric workflow
- Slim, ruggedly built for high mobility

* Feature requires licensing.

3 Scope of delivery and warranty

NOTICE

Product and packaging contain recyclable materials. Always store, ship, and dispose of according to local regulations.

ARRI is not liable for consequences from inadequate storage, shipment or disposal.

Delivery

On delivery, please check if package and content are intact. Never accept a damaged/ incomplete delivery. A complete delivery includes:

- AMIRA camera with lens mount according to order: PL, EF, B4
- Multi-viewfinder with AMIRA EVF cable
- Gold Mount or V-Lock battery adapter (if ordered)
- Camera handle with viewfinder adapter
- Four XLR connector caps (one spare; keep all four for later use!)
- Four BNC connector caps (remove before use)
- WPA-1 or BPA-3 base adapter (if ordered)
- WiFi antenna
- Bluetooth antenna
- USB memory stick
- 3 mm Allen key
- Quick Guide
- Original packaging incl. drying agent

Usually, the camera comes fully assembled. In the unlikely case that a handle, viewfinder, adapter, or antenna (etc.) is not assembled, see page 58 for instructions.

NOTICE

ARRI offers an increasing variety of product bundles and additional accessories.

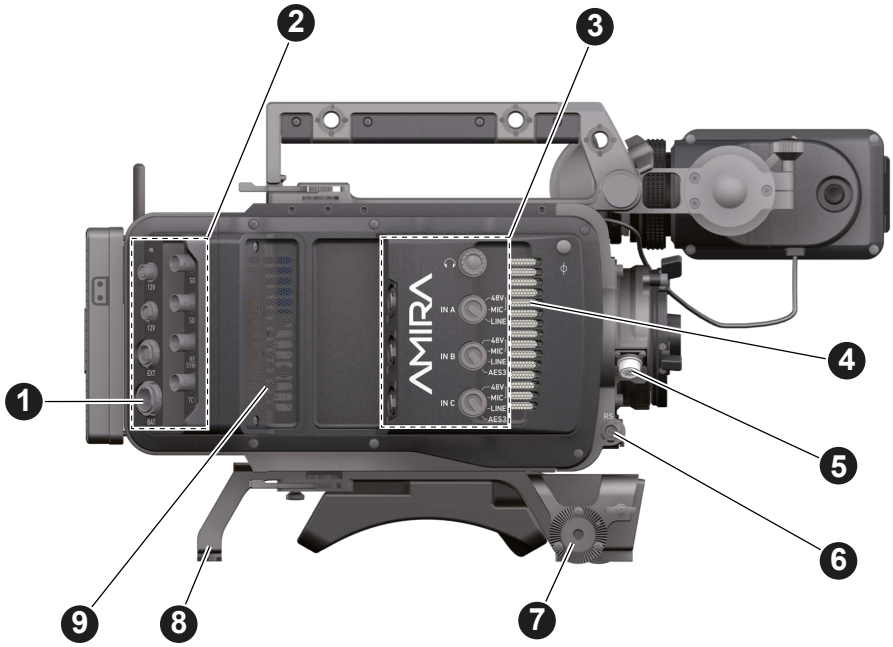
For details, please consult our website or your local ARRI Service Partner.

Warranty

For scope of warranty, please ask your local ARRI Service Partner. ARRI is not liable for consequences from inadequate shipment, improper use, or third-party products.

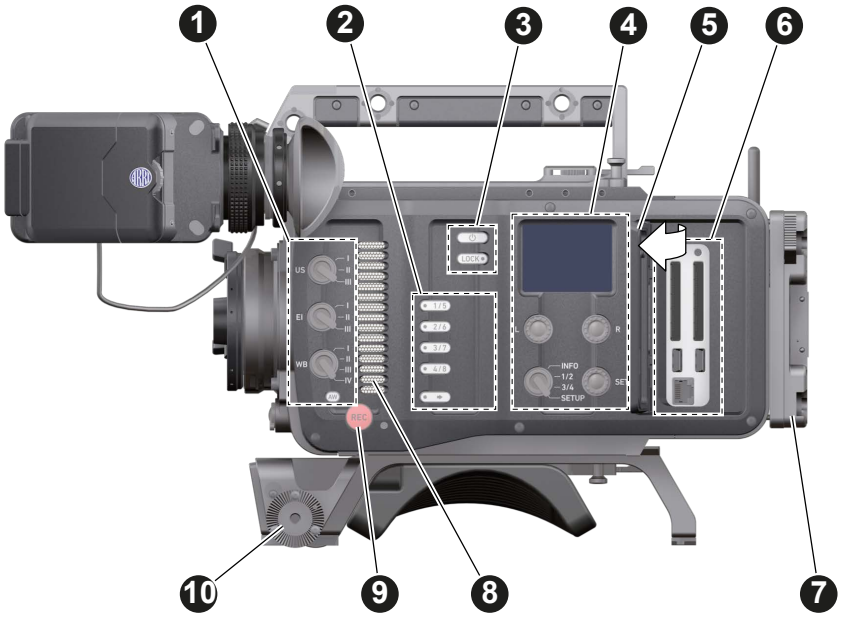
4 Camera layout

Right



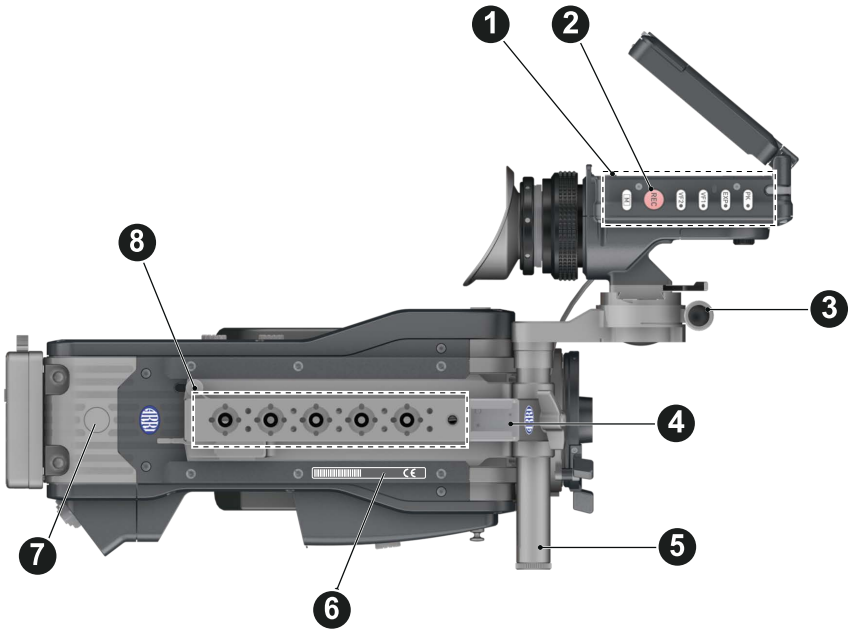
1	BAT power input	**6**	RS connector
2	I/O panel	**7**	Bracket rosette
3	Audio connector panel	**8**	WPA-1 with quick release connectors
4	Fan intake	**9**	Fan outlet
5	12-pin Hirose for ENG type lenses		

Left



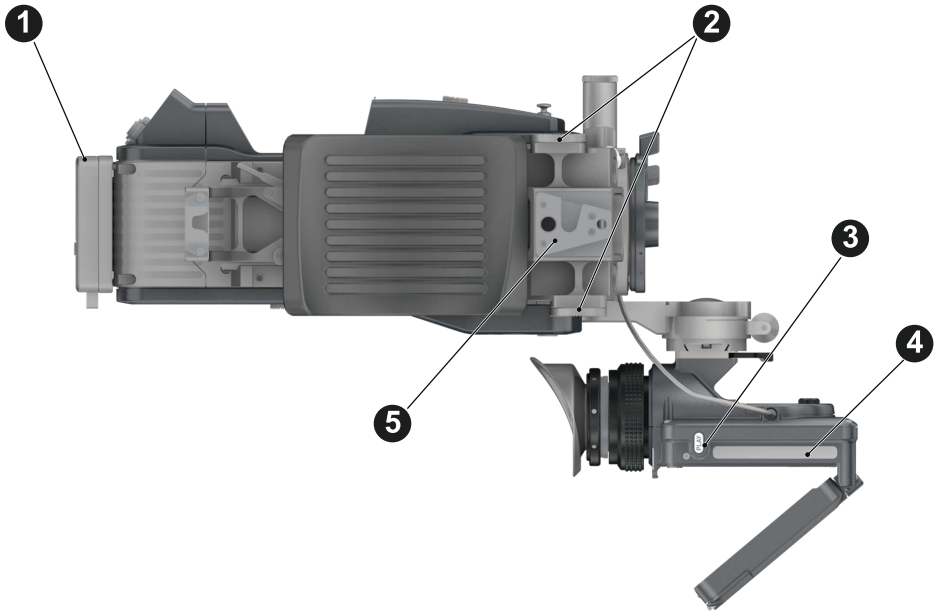
1	Operator panel	**6**	Media panel (behind lid)
2	User buttons	**7**	Battery adapter
3	Power button & camera lock	**8**	Fan intake
4	Audio control panel	**9**	Recording button
5	Lid	**10**	Bracket rosette

Top



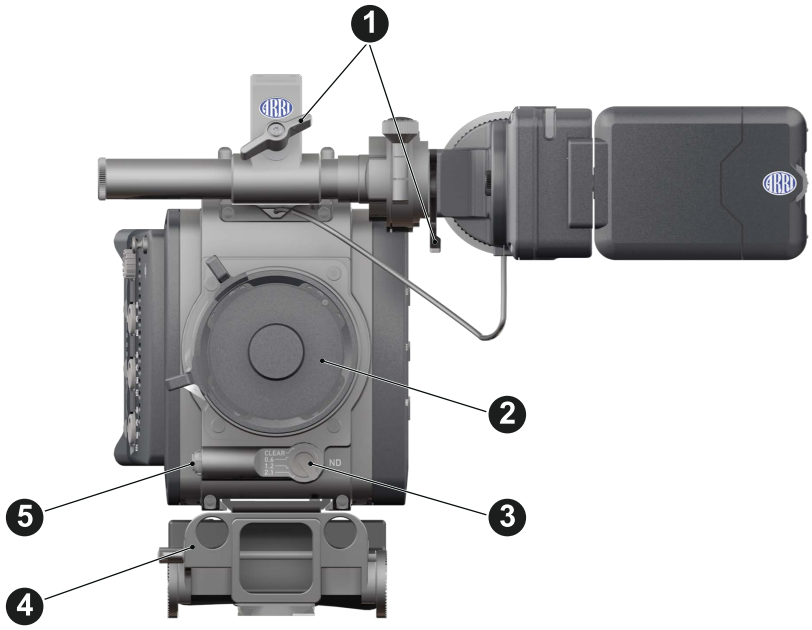
1	Viewfinder top buttons	**5**	Adjustable beam
2	Recording button	**6**	Camera type label
3	Viewfinder hinge with clamp	**7**	Level
4	Accessory shoe	**8**	Accessory threads on camera handle

Bottom



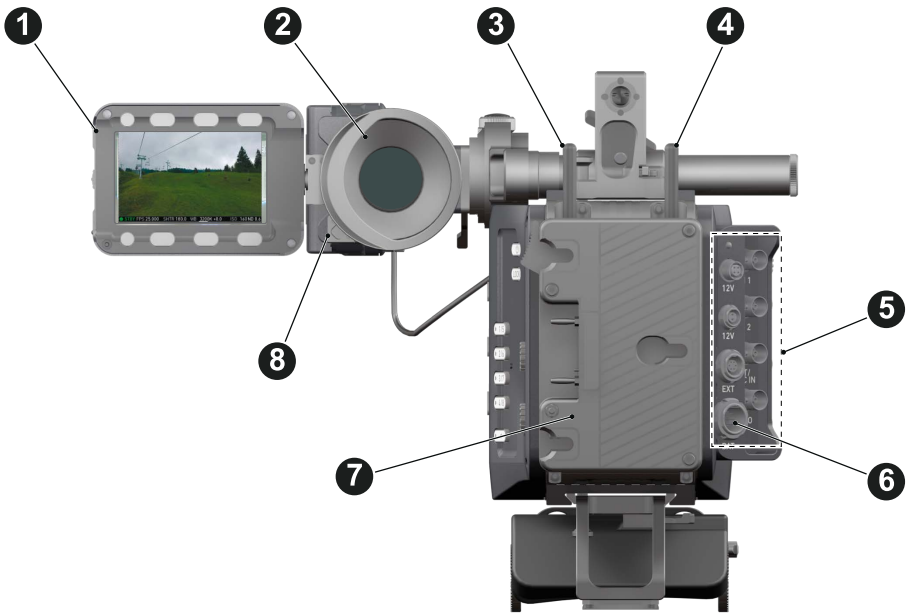
1	Battery adapter	**4**	Viewfinder type label
2	Bracket rosettes	**5**	WPA-1 quick-lock bracket
3	PLAY button		

Front



1	Clamps	**4**	15 mm rod receptacles
2	Lens mount (here: PL)	**5**	RS connector
3	ND filter switch		

Back



1	Fold-away monitor (viewfinder/GUI)	**5**	I/O panel
2	OLED eyepiece	**6**	BAT power input
3	Bluetooth antenna	**7**	Battery adapter (here: Gold Mount)
4	WiFi antenna	**8**	Proximity sensor for OLED eyepiece

4.1 Product identification

CE type labels with serial number are on the camera top (1) and under the viewfinder (2). The serial number consists of the last 5 digits of the equipment number K1.71700.0-XXXXX. An FCC conformity label is on the camera bottom.

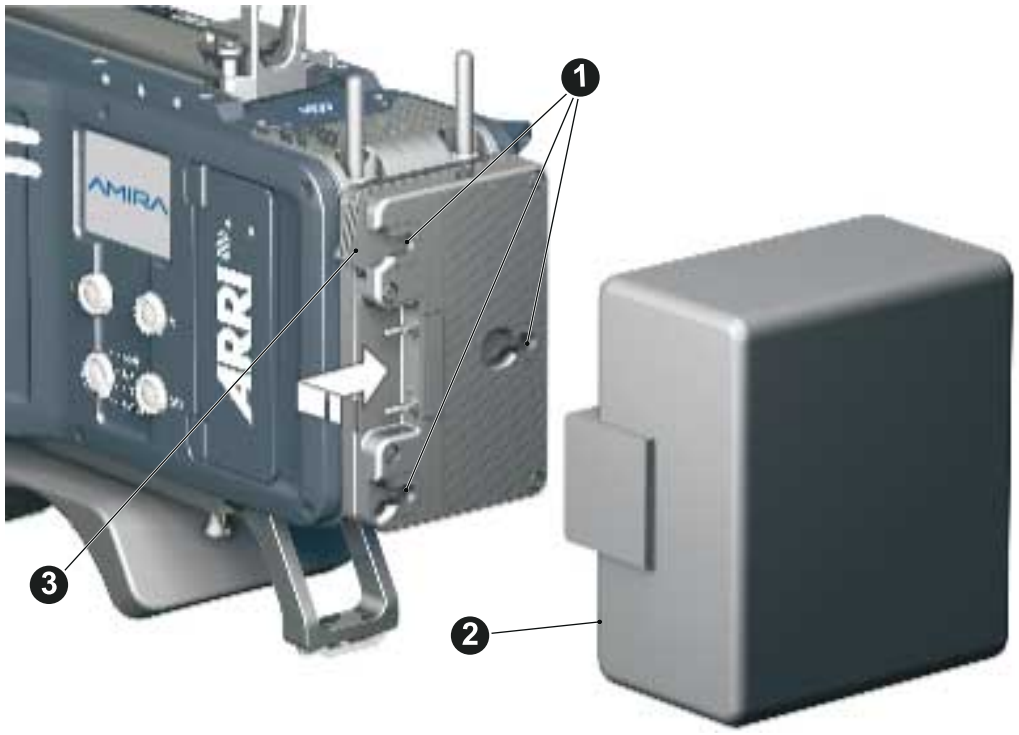
5 Power supply

Depending on your battery demand, the camera offers either a Gold Mount or a V-Lock adapter. You can change both by yourself (see page 58). For further details, see our website or ask your local ARRI Service Partner.

NOTICE

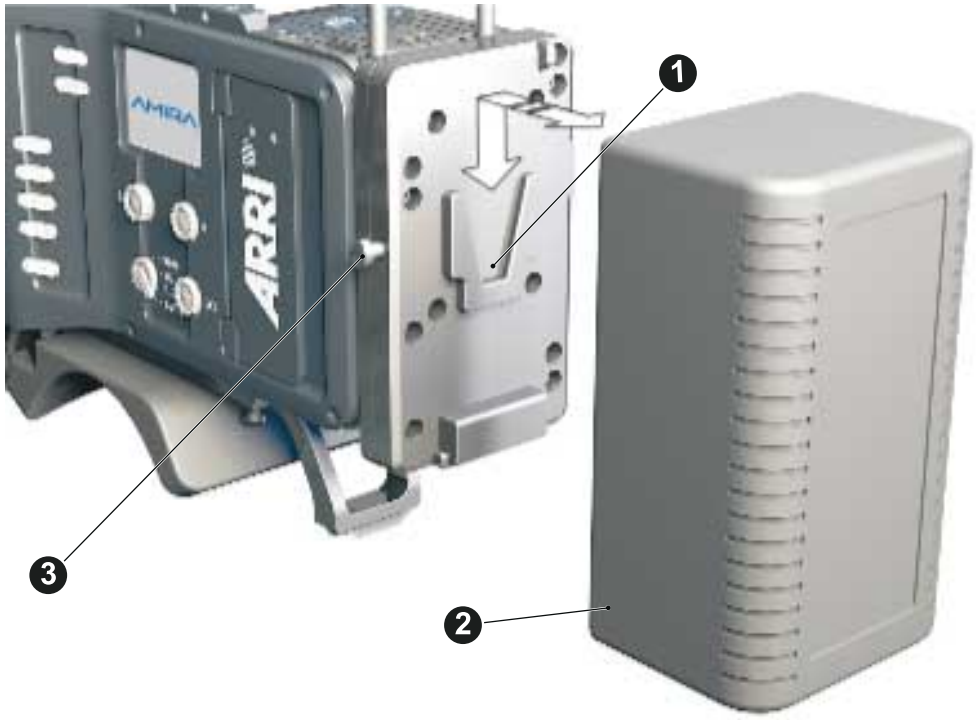
For maximum operation time, always use fully charged batteries with 10.5 to 34 V DC (50 W minimum).

5.1 Changing a Gold Mount battery



1. Place the battery pins in the mount receptors (1).
2. Slide the battery (2) to the right until the adapter audibly locks (1).
3. **To release:** With the lever pushed (3), slide the battery (2) to the left and backwards.

5.2 Changing a V-Lock battery



1. Place the battery's wedge into the V-shaped lock (1).
2. Slide the battery (2) downwards until the adapter audibly locks (1).
3. **To release:** With the pin pushed (3), slide the battery (2) up- and backwards.

5.3 BAT in

NOTICE

If the power supply to BAT is interrupted with the camera switched on, the camera will automatically repower and boot-up on reconnection.

Use the BAT connector, and a KC50-S or KC50-SP-S cable, to supply the camera with 10.5 to 34 V DC.

5.4 Powering auxiliary devices via camera

You can supply auxiliary devices from the camera via several connectors (2.0 A max):

- **12 V** via 2-pin LEMO, 4-pin Hirose, or via D-tap on battery adapter
- **24 V** via RS
- **Camera voltage** via EXT

Note: For connector pin-out information, see the User Manual. With a critical power supply level, the camera switches off all auxiliary power supplies first.

6 Switching on/off

1. **To switch on:** Press the power button (1).
2. The ARRI and AMIRA logos appear in the audio display (2) and monitor (3).
3. **To switch off:** Press and hold the power button (1).
4. A countdown appears in the audio display, monitor, and viewfinder.
5. On reaching zero, the camera powers off.

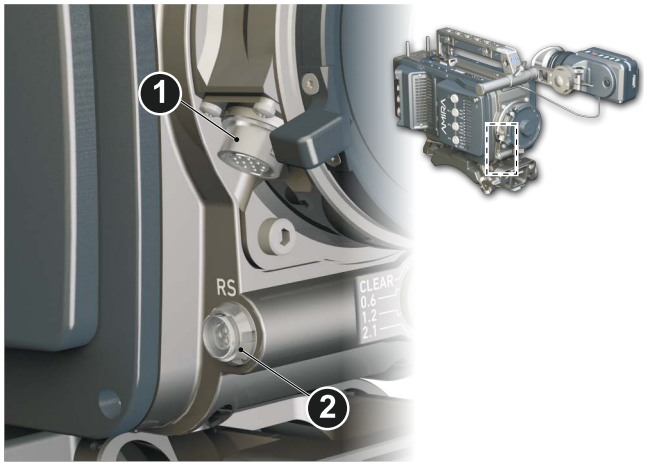
6. **Note:** The *STBY* icon (1) signals that the camera is ready to record.
7. If not: Insert a CFast 2.0 card. See page 55.
8. Format the card for recording.

7 Connectors

NOTICE

Connecting or disconnecting devices or cables while recording can disturb the audio/image signal due to static electricity.

7.1 Front connectors



1 12-pin Hirose for ENG type lenses
2 3-pin Fischer RS

ENG (12-pin Hirose)

Supplies lens servos with power and provides access to lens servo functions.

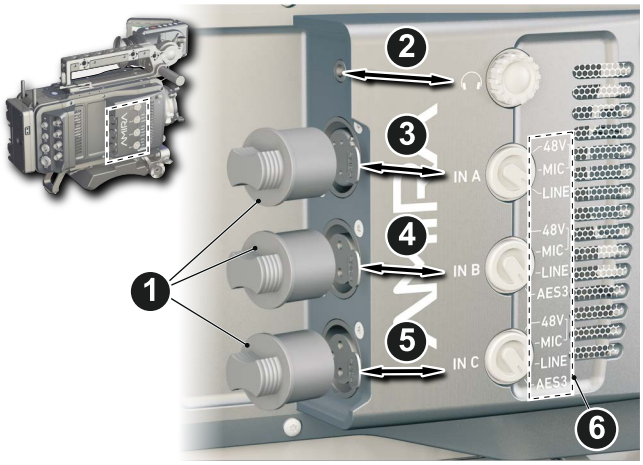
RS (3-pin Fischer)

This 3-pin Fischer socket for RS input supplies external accessories with 24 V power (2.0 A). It also carries a frame pulse output and accepts an ARRI remote start/stop trigger.

7.2 Audio connector panel

NOTICE

Rubber caps protect the XLR connectors from dirt and moisture. Always cap unused XLR connectors.



1	Protective caps
2	Headphone out & volume
3	XLR 5-pin audio input
4-5	XLR 3-pin audio input
6	Input signal options

Headphone

Headphone 3.5mm stereo TRS (“Mini-jack”) output for monitoring audio channels.

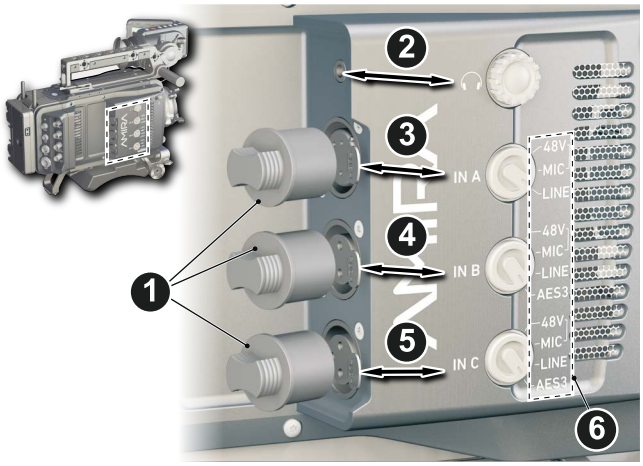
IN A (5-pin XLR)

XLR input for microphone signals (including 48V phantom power supply) and line level signals.

IN B & C (3-pin XLR)

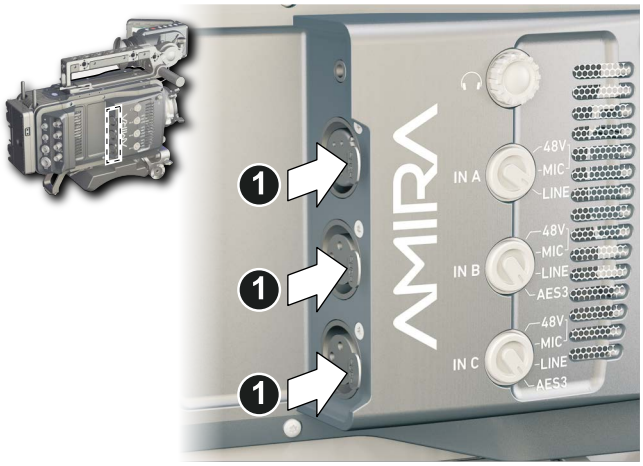
XLR input for microphone signals (including 48V phantom power supply), line level signals and AES3 digital.

Connecting audio devices



1. Uncap the needed connectors only (1).
2. Connect the headphone (2).
3. Set the headphone volume by turning the wheel (2).
4. Alternatively, you can use the *SET* wheel on the camera's left. See page 34.
5. Via switches (3 to 5), select the appropriate setting for your audio device (6):
    - *48V:* Analog microphone level signals with phantom power supply
    - *MIC:* Analog microphone level signals
    - *LINE:* Analog line level signals
    - *AES3:* Digital AES/EBU signals
6. Connect each device (3 to 5) until the connector audibly locks.

Disconnecting audio devices



1. Press the *PUSH* button to unlock (1).
2. Remove the cable by pulling on the connector.
3. Replace with another cable.
4. Or: Cap the connector for protection.

7.3 I/O panel

NOTICE

If the power supply to BAT is interrupted with the camera switched on, the camera will automatically repower and boot-up on reconnection.

1 BAT main power in
2 EXT in/out
3 D-tap
4 Aux power out
5 HD-SDI image out 1 & 2
6 Return/sync in
7 Timecode in/out

12V (4-pin Hirose)

Supplies 12 V auxiliary power with a maximum power of 2.0 A (combined with the 2-pin LEMO).

12V (2-pin LEMO)

Supplies 12 V auxiliary power with a maximum power of 2.0 A (combined with the 4-pin Hirose).

D-tap

A D-tap on the battery adapter supplies accessories with 12 V DC from the camera.

EXT (6-pin LEMO)

A connector for external accessories, carrying two CAN buses and accessory power output at camera voltage level (2.0 A max.).

BAT (8-pin LEMO)

Via cables KC50-S (2 m, straight) and KC50-SP-S (coiled), this main power supply input accepts 10.5 to 34 V DC.

SDI OUT 1 & 2 (BNC)

Both BNC sockets (here: SDI 1) deliver image outputs in 1920x1080 422 1.5G, 422 3G and 444 3G single link formats. SDI 2 also supports the 3840x2160 422 6G format in 4K UHD mode.

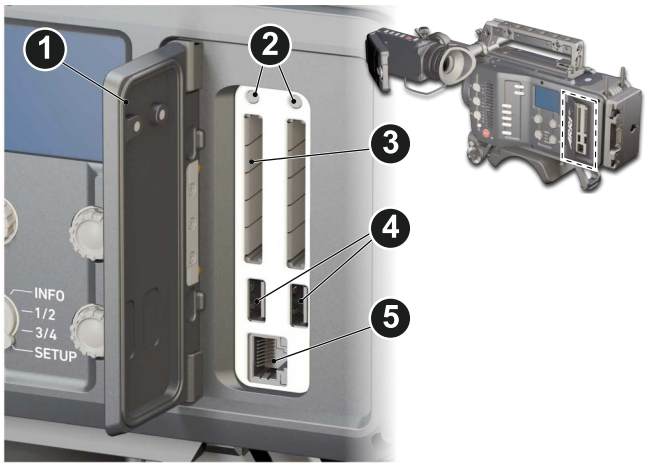
RET/SYNC IN (BNC)

A BNC socket for Genlock input, or HD-SDI return image signal (configurable). Supports Black Burst, Tri-Level Sync and HD-SDI genlock signals.

TC I/O (BNC)

A Timecode in-/output (BNC interface) to be configured via camera menu.

7.4 Media panel



1 Lid
2 Status LEDs
3 CFast 2.0 card slots A & B
4 USB in/out 1 & 2
5 RJ45 Ethernet

Card A & B (CFast 2.0)

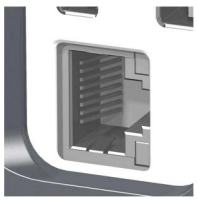
Storage media slots for CFast 2.0 recording cards.

USB 1 & 2

Interface for USB memory sticks with FAT file system. Can also be used to charge USB devices. Each port supplies 5V with a maximum current of 500mA.

Note: Only one USB memory stick can be used at a time. Independent from slot, the stick connected first becomes active. Meanwhile, the second slot can still be used to charge a device.

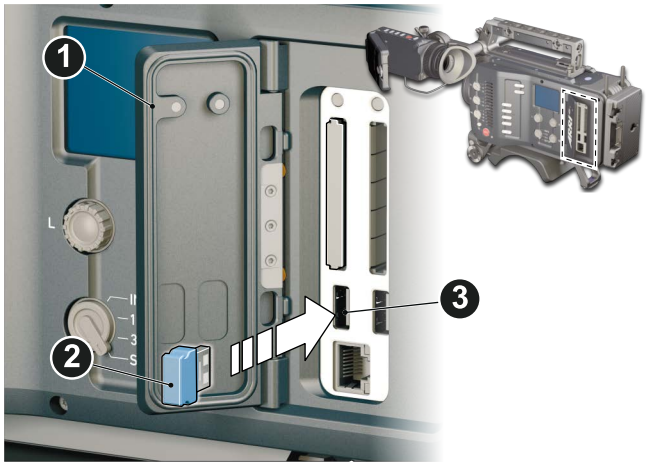
Ethernet LAN



This RJ45 remote and service interface works via LAN.

7.4.1 Preparing a USB memory stick

USB memory sticks for the AMIRA must have a specific folder structure which can be created with the camera.



1. To prepare a USB memory stick: Open the media lid (1).
2. Connect a FAT-formatted USB stick (3) to the camera (2).
3. From the home screen, navigate to *Menu* > *Media* > *Prepare USB medium.*
4. Press *CONFIRM* to prepare the folder structure.
5. The USB stick (3) is now ready for use with the camera.
6. **Note:** To avoid file corruption, never remove the USB stick during write access.
7. You can remove the stick from the camera without unmounting.

7.4.2 Changing a CFast 2.0 card

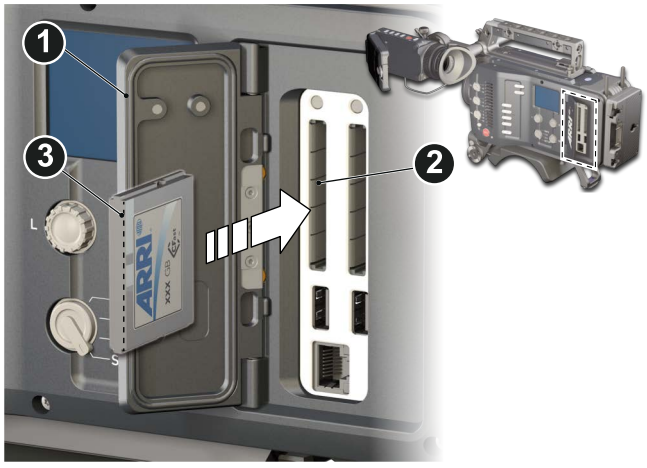
NOTICE

AMIRA does not accept ALEXA-formatted CFAST 2.0 cards, and vice versa.

Before using a CFAST 2.0 card with AMIRA, you **must** erase it in-camera to create the required file system.

Avoid damage to the contacts of both camera and card. Always insert cards as described in this document.

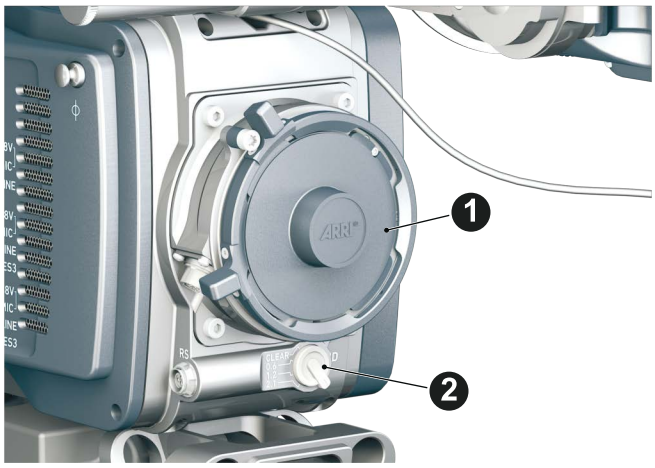
Never change memory cards when recording - this may damage the recorded clip.



1. Open the lid (1).
2. Align the card's positive edge (3) facing the camera rear.
3. With the contact pins first, gently insert the card, until it audibly locks (2).
4. Gently close the lid (1). **Never** force it closed on an unlocked card.
5. To quickly change the active card you can set up a user button. See page 39.

6. **For card removal:** Open the lid (1).
7. Push the card in until it audibly unlocks (2).
8. Remove the card.

8 Lens mount/filters



1 Lens mount (here: PL)
2 ND filter switch (clear - 0.6 - 1.2 - 2.1)

Cooke /i support

The camera supports the Cooke /i protocol for lenses running FW versions according to the following table.

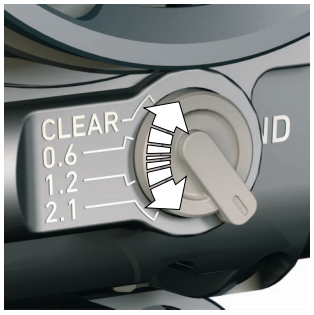
Lens type	FW version
S4 /i Prime lens (10-bit)	0.29 or higher
S4 /i Prime lens (12 bit)	0.39 or higher
S4 /i Zoom lens (10 bit)	1.29 or higher
S4 /i Zoom lens (12 bit)	1.39 or higher

The FW version can be retrieved from the lens with the *Cooke Viewer Lens Display* program. For detailed info, please contact Cooke Optics directly.

8.1 *ND* filter switch

NOTICE

AMIRA uses FSND (Full Spectrum Neutral Density) filters, which are linear across the full spectrum of the camera sensor. This prevents artifacts from infrared wavelengths and the need for additional IR filters.



The ND filter switch controls the internal ND filter module. Filter densities of 0.6, 1.2 and 2.1 allow quick exposure changes and compensation over a range of seven stops.

1. To activate a filter: Switch to the desired filter position.

Other ways to control ND filter

The ND filter can also be controlled via user buttons, the web remote or the overlay menu, accessible via HOME>EI>ND. Any of these may result in the active ND filter not matching the ND switch position.

A difference between current switch position and active ND filter is indicated by an orange ND value on the homescreen and in the status overlays of monitor, EVF and SDI images (if overlays are active). The currently selected ND filter is also stored in and recalled from user setup files.

To give precedence to the ND filter switch, change the switch position once.

8.2 Changing a lens

NOTICE

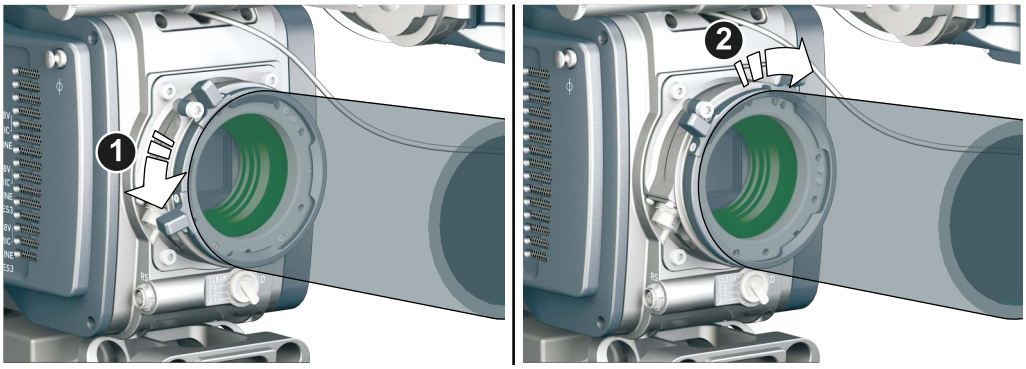
The following description applies to PL mounts. For EF and B4 mounts, please refer to the User Manual.

Protect the sensor: Always keep a lens or protective cap on the empty lens mount.

Change lenses in dry, dust-free environments only.

Never exceed the maximum lens dimensions.

Have every lens properly shimmed as prescribed by the manufacturer.



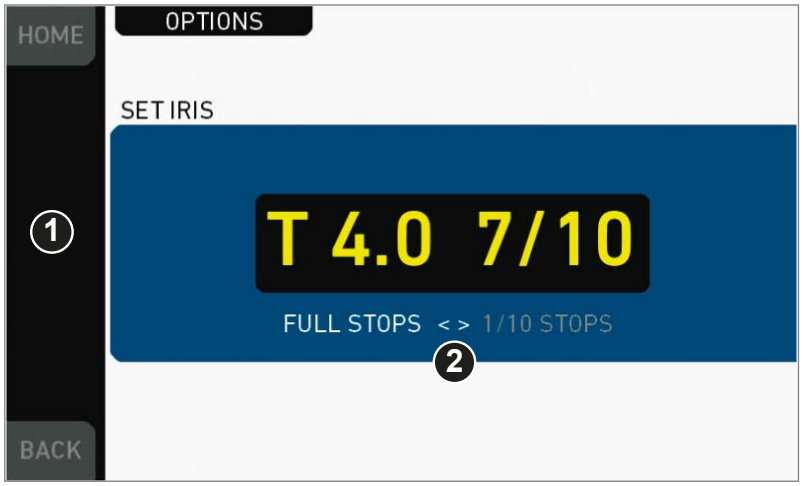
1. Observe maximum lens dimensions (see User Manual).
2. Unlock the lens mount counter-clockwise (1) and remove the lens or cap.
3. **Never** touch the sensor.
4. Either: Mount the next lens and lock (2) the lens mount clockwise.
5. Or: Always cap and lock (2) an empty lens mount clockwise.

8.3 Lens control

Control of lens iris is possible with ENG PL mount and EF lenses. You can control the iris manually, via user button, or via auto iris.

8.3.1 Manual iris adjustment

HOME > EI > IRIS



Pressing the wheel (1) changes the step size between full and sub-stops (2). **Note:** Sub-stop precision depends on the lens type and is automatically set by the camera.

On the live screen, you can activate and deactivate iris adjustment (1) by short-pressing the lower round button (2). Keeping the button pressed (2) activates iris adjustment until it is released. (2). **Note:** Depending on the image flip, the round buttons may appear on the right.

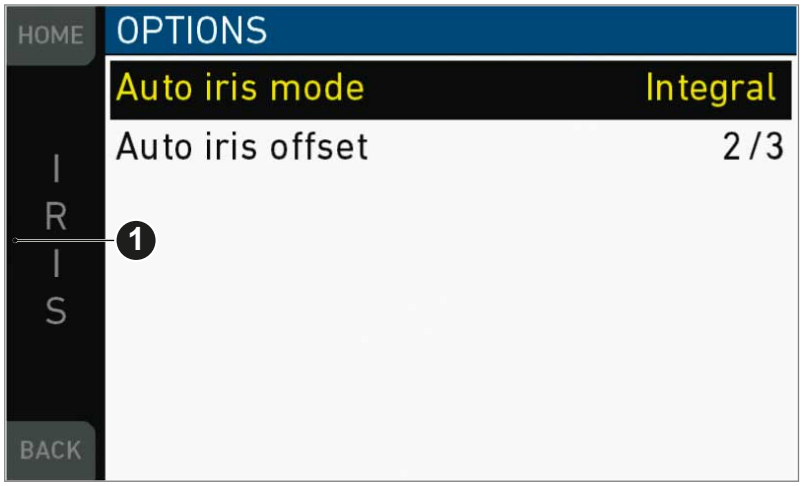
8.3.2 Iris control via user button

MENU > User button > Button X

For iris control, assign one user button each with *Open Iris* and *Close Iris.* See "MENU > User buttons".

8.3.3 Auto iris

HOME > EI > IRIS > OPTIONS



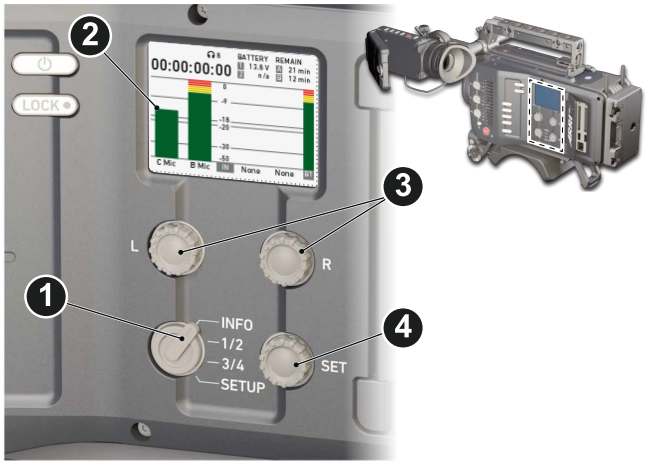
Via jogwheel (1), you can define the auto iris behavior.

Auto iris mode: Defines the iris calculation:

- *Integral:* Iris is calculated based on full image content.
- *Center:* Iris is calculated with higher priority on image center.

Auto iris offset: Corrects the auto iris calculation result by up to +/- 3 stops in 1/3 stop step sizes. Activate via user button.

9 Audio control panel



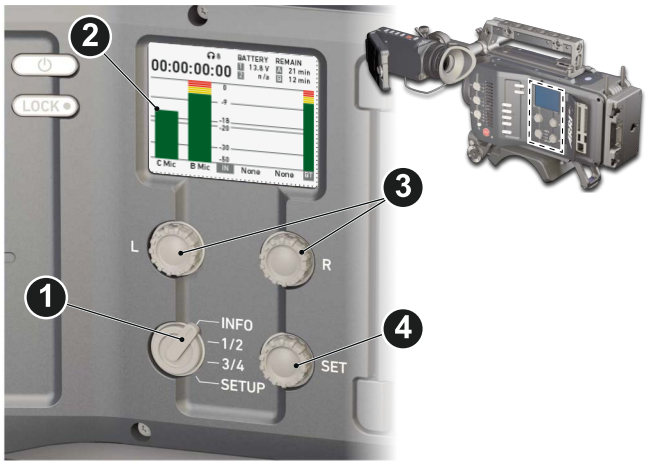
1 Audio function switch
2 Audio display
3 Left/right gain controls
4 Audio *SET* jogwheel

9.1 Channel configuration

NOTICE

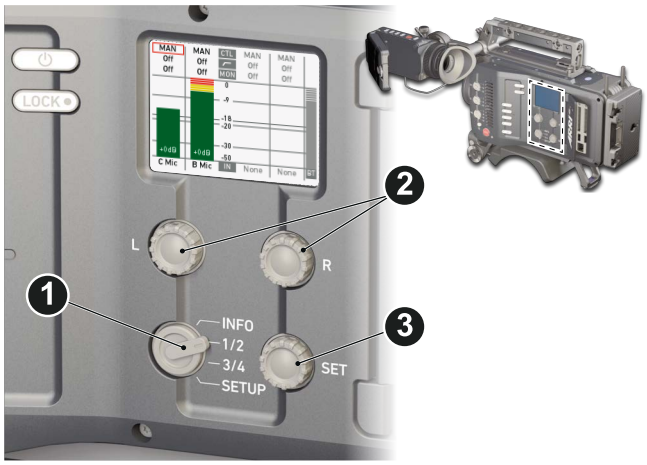
Audio is disabled if the sensor frame and project rates are not equal. With audio recording disabled or otherwise switched off, neither audio in/output nor audio processing is possible.

Checking the audio status



1. Select *INFO* (1) to display current status information (2).
2. *L* and *R* (3) are now deactivated.
3. Turning the depressed *SET* jogwheel (4) will change the headphone volume.

Adjusting channel gain

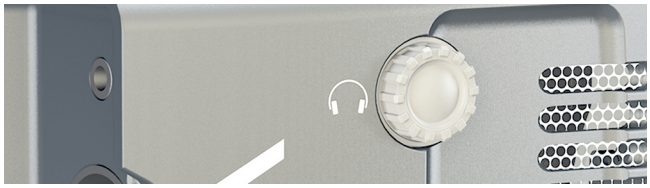


1. Select *1/2* or *3/4* (1).
2. Adjust channel 1 (or 3) gain via left gain control (2).
3. Adjust channel 2 (or 4) gain via right gain control (2).
4. To change channel 1/2 (or 3/4) setup: Select the desired parameter via *SET* jogwheel (3).
5. To enter the edit mode: Press *SET* (3).
6. To change a parameter: Turn the *SET* jogwheel (3).
7. To confirm and leave the edit mode: Press *SET* (3) again.

Editing the audio setup

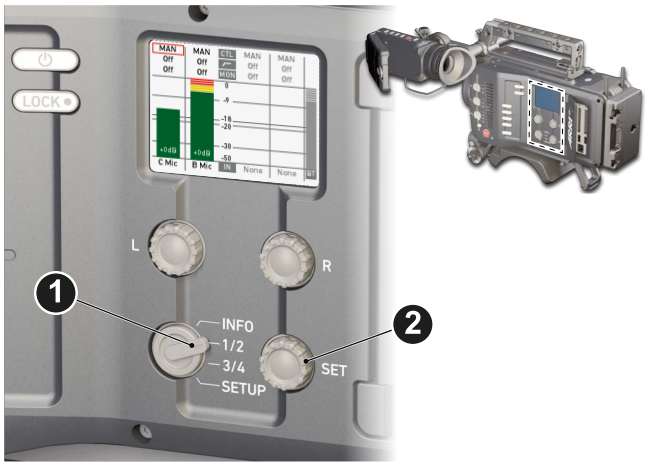
1. Select *SETUP* (1) for adjusting overall audio parameters (2).
2. To navigate and adjust: Press and turn the *SET* jogwheel (3).
3. To enter or confirm: Press *SET* (3).
4. Select the desired parameter via *SET* jogwheel (3).
5. To enter the edit mode: Press *SET* (3).
6. To change a parameter: Turn the *SET* jogwheel (3).
7. To confirm the value: Press *SET* (3) again.

9.2 Headphone volume



Use the headphone volume wheel (see above).

Or: Use the audio control panel (see below):



1. Switch to *INFO* (1).
2. The volume level shows next to the headphone icon in the display.
3. Turn the depressed *SET* jogwheel (2).

10 Camera Controls

The camera body allows to control the camera through buttons and switches, which are explained in detail in the following chapters.

10.1 Operator panel

The operator panel consists of switches that offer quick changes of important camera functions, such as exposure index or white balance.

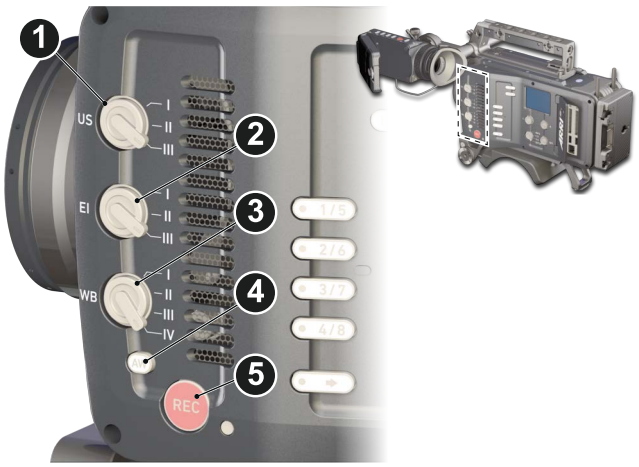
For all switch positions (except *ND* positions), you can assign an individual presetting. See the User Manual for full instructions.

The *EI* and *WB* switches are assigned to exposure index and white balance respectively. Permanent switch icons on the *EI* and *WB* soft buttons on the home screen indicate this permanent assignment.

To the *US* switch, you can assign one of the functions *FPS, SHUTTER,* or *LOOK*. A switch symbol appears on the home screen next to the soft button of the assigned function.

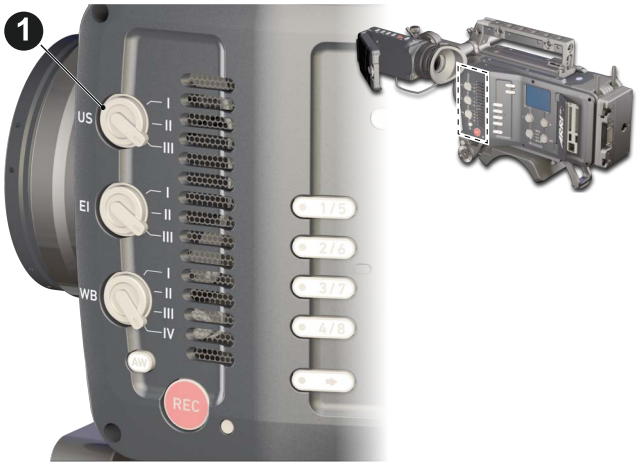
NOTICE

You can only edit the value of the currently active switch position.

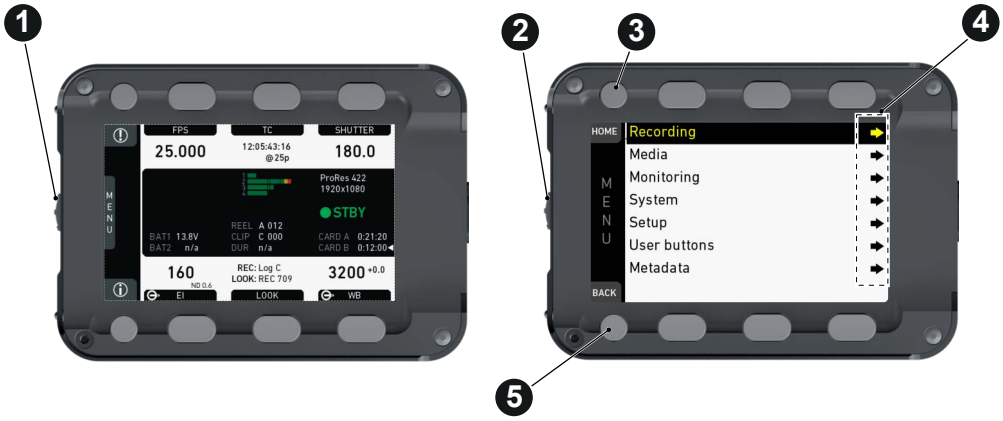


1 User switch & settings
2 Exposure switch & settings
3 White balance switch & settings
4 Auto-white balance button
5 Recording button & LED

10.1.1 Setting the *US* switch function

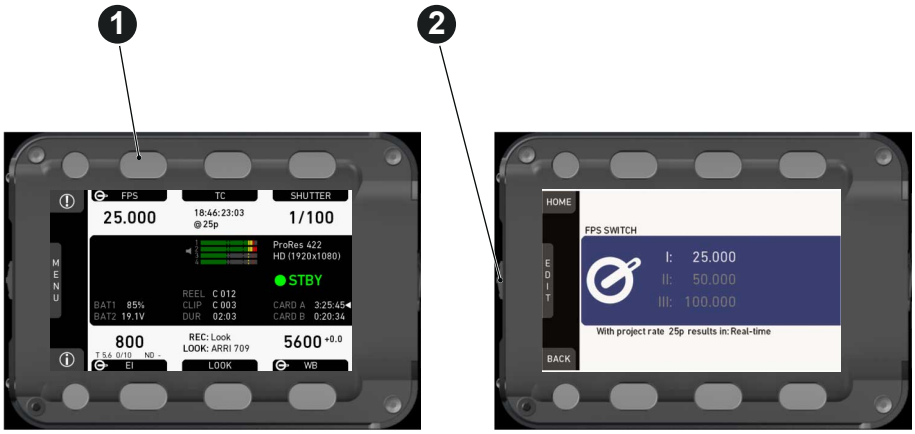


1. Switch *US* (1) to the desired position.



2. From the home screen, navigate (1) to *MENU* > *User buttons* (4).
3. Via jogwheel (2), select the entry *User switch* and change it according to your needs:
    - *None:* User switch is disabled
    - *FPS:* Switch changes the sensor frame rate
    - *SHUTTER:* Switch changes the shutter angle
    - *EXP Time:* Switch changes the exposure time
    - *Look:* Switch changes the look file
4. Leave the menu by pressing *HOME* (3).
5. **Note:** Recording disables the *US* switch.

10.1.2 Presetting the *US / EI / WB* switches



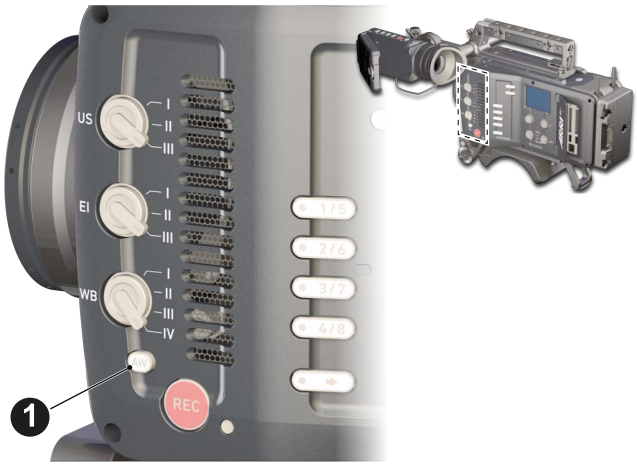
1. On the home screen, select a switch function (here: *FPS*) by pressing the button (1).
   Note: Active functions show a switch icon in the button label.
2. Change the switch to the desired position.
   Note: You can only change the preset of the active switch position.
3. Press the jogwheel (2).
4. Via jogwheel (2), select the desired preset.
5. Confirm by pressing the jogwheel (2).

6. Repeat for other switch positions if desired.
7. For *FPS, SHUTTER, LOOK*, and *WB*, you can configure preset lists for each switch position.

10.1.3 *AW* auto white balance button

The *AW* button triggers the auto white balance functionality: Based on the camera's live image, *AW* calculates an automatic white balance and overwrites the active *WB* settings. The result is also stored as the preset value of the active *WB* position and in the first entry of thw WB list.

AW triggering



► **Note:** Under- or overexposed images may cause the auto white balance to fail. Always trigger auto white balance with properly exposed images.

► To trigger an automatic white balance: Press *AW* twice within one second (1).

10.2 User preset panel

1 Power button
2 Camera lock
3 User buttons
4 SHIFT button

10.2.1 Locking/unlocking

NOTICE

Locking the camera disables, unlocking re-enables all camera controls configured for locking except audio controls.

Changing the position of the *US, EI, WB*, or *ND* switch on a locked camera will result in parameter changes when unlocking.

1. Press and hold *LOCK* (2).
2. A countdown appears in both the monitor and viewfinder. Once the countdown reaches zero, the camera is locked.
3. **To unlock:** Press and hold *LOCK* (2) again.

10.2.2 User buttons

In the camera menu (*MENU* > *User buttons*) you can assign individual functions to each user button. For full instructions, see the User Manual.

1. Press a button (1) to trigger its function.
2. For buttons five to eight: Press and hold *SHIFT* (2); then press a button (1).
3. An LED on each button reflects the functional status.
4. To check the functional status of buttons five to eight (1): Press *SHIFT* (2).

Presetting user (and VF) buttons

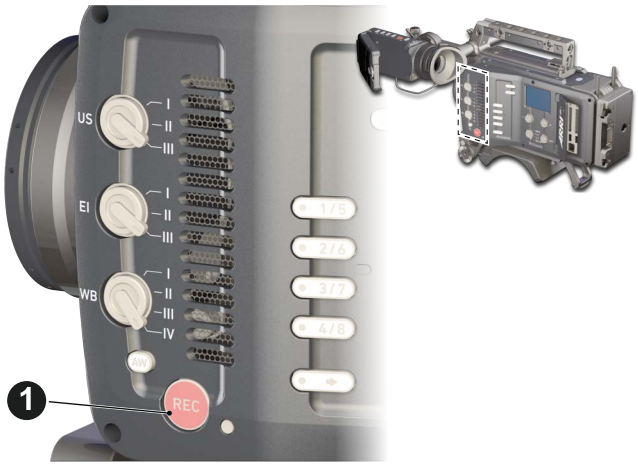
1. Toggle from live monitor to home screen. See page 44.
2. Press jogwheel for *MENU*.
3. Wheel-navigate to the sub-menu *User buttons* and press jogwheel to enter.
4. Enter the desired sub-menu for EVF, camera or WCU user buttons.
5. Wheel-navigate to the desired button and press the jogwheel.
6. Select the desired function with the jogwheel.
7. To cancel: Press *BACK*.
8. To confirm: Press the jogwheel.
9. To conclude: Press *HOME*.
10. If applicable: Repeat for all other buttons, including *VF1* and *VF2*.

10.3 Recording

NOTICE

Pressing a recording button returns the MVF-1 user interface to the home screen and disables the menu access.

Recording also disables the *US* switch and the home screen buttons for *FPS, TC, Shutter,* and *Look* settings.



1. Prepare the camera.
2. Preset all switches and buttons.
3. Press *REC* (1) on the left camera side.

4. Alternatively, press *REC* (1) on the viewfinder.

NOTICE

Never change memory cards when recording - this may damage the recorded clip.

NOTICE

Connecting or disconnecting devices or cables while recording can disturb the audio/image signal due to static electricity.

11 MVF-1 controls

1 Monitor (Live & GUI)
2 Peaking button
3 Exposure tool button
4 VF1 & VF2 user buttons
5 Monitor button
6 Proximity sensor
7 Diopter control
8 Recording button
9 Screen buttons
10 Jogwheel

Proximity sensor

The infrared proximity sensor automatically deactivates the viewfinder's internal OLED panel when you withdraw your eye. The sensor is placed either on the bottom left-hand side of the viewfinder (generation 1, shown in image), or it is integrated into the eye cup (generation 2, not shown).

Note: To avoid hardware damage, always keep the sensor unobstructed.

Note: Left-eye or camera right-side operation of the EVF may degrade the sensor function of generation 1 sensors.

11.1 MVF-1 buttons

11.1.1 *PK* peaking button

1. To activate peaking on monitor (1) and MVF-1 (3): Press *PK* (2).
2. Peaking highlights the image parts that are in focus for better focus judgement.
3. For *PK* settings: Go to *MENU* > *Monitoring* > *EVF/Monitor* > *Peaking*.

11.1.2 *EXP* exposure tool button

The *EXP* button (2) activates the set exposure tool on the monitor (1) and EVF image (3). Use the tool for evaluation of the image exposure levels. An activated tool lights up the button (2).

For *EXP* setting: Go to *MENU* > *Monitoring* > *Exposure tools.*

In *Zebra* mode, the tool overlays up to two luminance ranges with diagonal stripes. *High zebra* ranges above, *Mid zebra* around the user-defined luminance value.

False color mode overlays predefined luminance ranges as follows:

Luminance range	**Signal level**	**Color**
White clipping	100 to 99 %	Red
Just below white clipping	99 to 97 %	Yellow
One stop over medium gray (Caucasian skin)	56 to 52 %	Pink
18 % medium gray	42 to 38 %	Green
Just above black clipping	4.0 to 2.5 %	Blue
Black clipping	2.5 to 0.0 %	Purple

11.1.3 *VF1 & VF2* user buttons

► Via the camera menu, you can assign a function to both *VF-1* and *VF-2* buttons (1). For details, see the user manual.

11.1.4 *PLAY* button

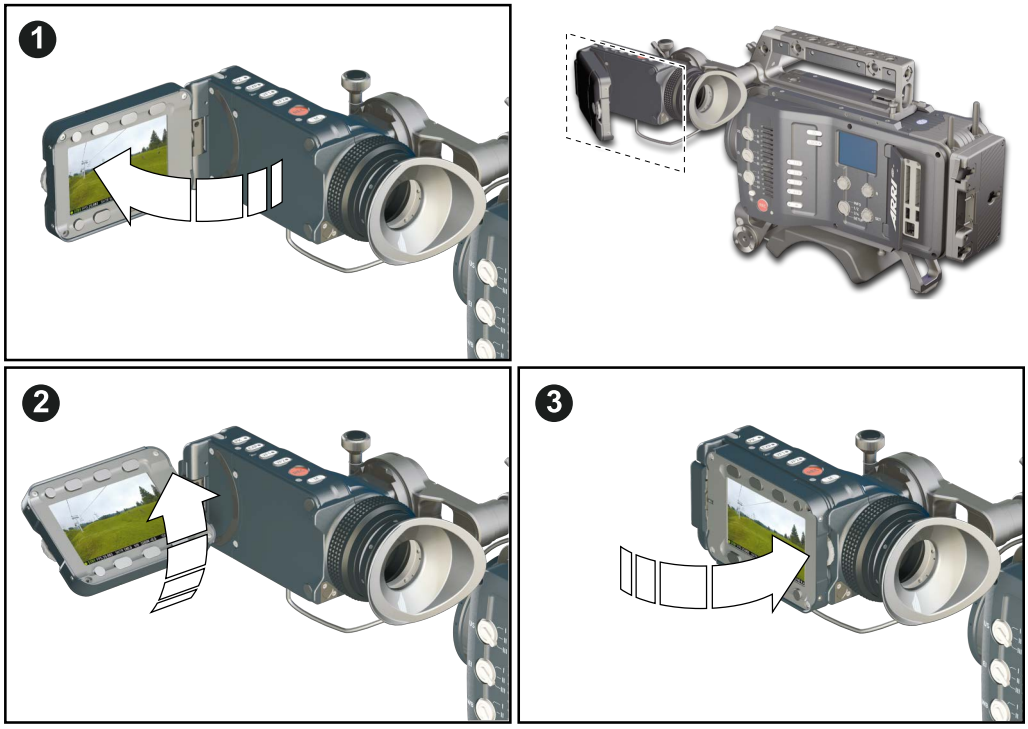
1. Press *PLAY* (1) for one second to see the last clip of the active CFast 2.0 card.
2. To leave playback: Press *PLAY* (1) for one second.
3. Or: Press the EXIT screen button.
4. To select other clips, use the on-screen navigation. For details, see the User Manual.

11.1.4.1 Playback screen controls

11.2 Diopter adjustment

► Twist the ring left or right for diopter adjustment (1).

11.3 Adjusting the monitor

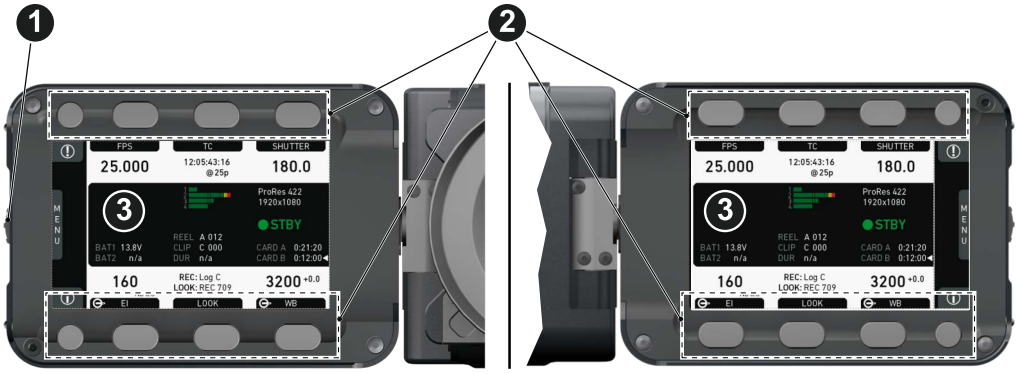


► Fold (1), swivel (2) and flip (3) the monitor according to your needs.

11.4 Changing the monitor mode

1. To change the monitor mode between live view and user interface: Press *M* (1).

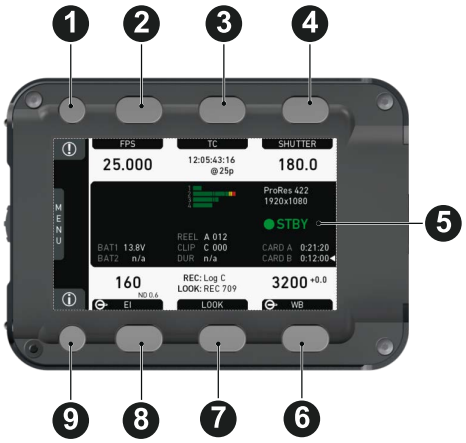
2. In live mode, toggle the status bar content (1) via the lower buttons.



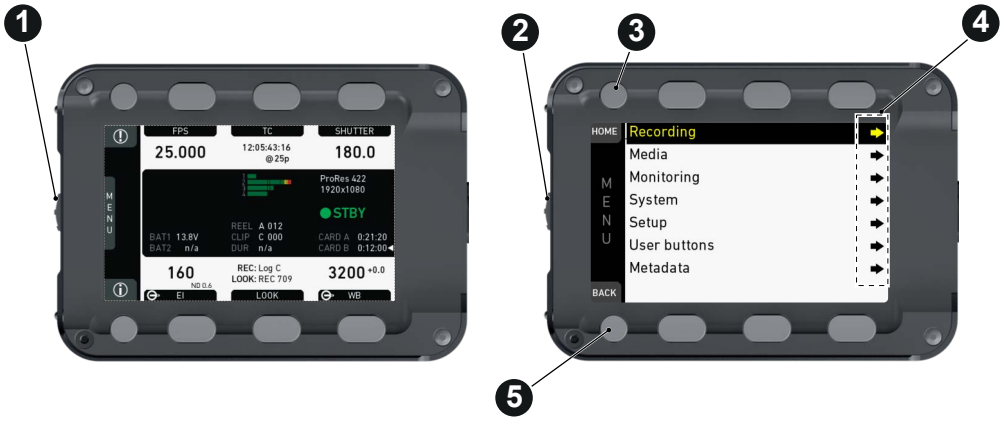
3. Via Menu > Monitoring > EVF/Monitor > Settings > Monitor flip mode, you can disable the location sensor that automatically flips the user interface to match a left- or right-sided monitor position (3).

11.5 Menu access

The user interface centers around the home screen, with access to essential status parameters and camera functionalities:



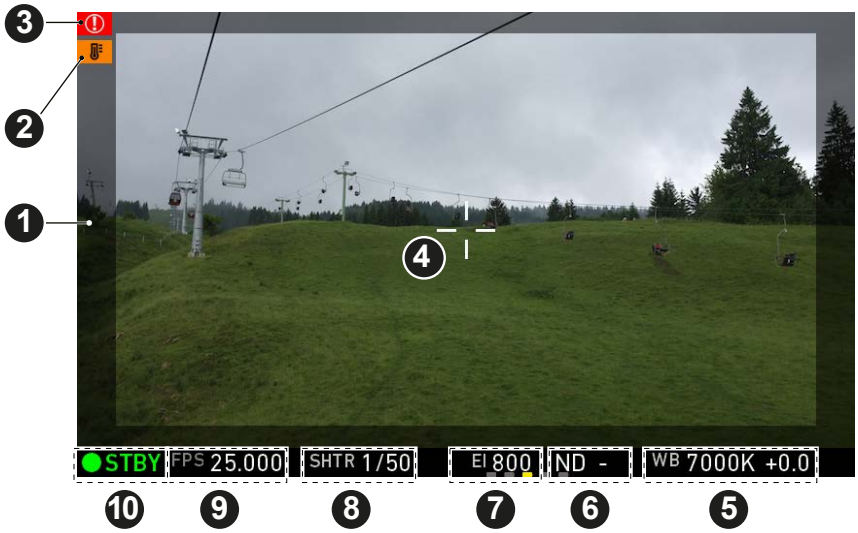
1 *!*: Alert messages
2 *FPS*: Sensor frame rate
3 *TC*: Timecode
4 *SHUTTER*: Shutter angle or, if chosen instead, exposure time
5 *STBY*: Camera standby status
6 *WB*: White balance
7 *LOOK*: Gamma settings and look files
8 *EI*: Exposure index
9 *İ*: Info screen



1. To enter the *MENU:* Press the jogwheel (1).
2. Scroll with the jogwheel (2) up or down to the desired entry (4).
3. To enter: Press the jogwheel (2).
4. Entries with an arrow navigate to a lower menu level.
    - To navigate deeper: Use the jogwheel (2).
    - To return to a higher menu: Press *BACK* (5).
5. Entries with a value allow direct editing.
    - To edit a value: Turn the jogwheel (2).
    - To confirm and end editing: Press the jogwheel (2).
    - To cancel editing: Press *BACK* (5).
6. To leave the menu: Press *HOME* (3).

11.6 Live monitor

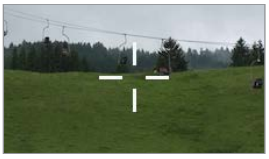
Below the camera live image, the live screen shows image and camera status. You can toggle the bar's content via the left or right oval button below. The center oval button returns you to the main camera parameters.



1	Surround mask	**6**	ND filter
2	Camera temperature (orange: warning, red: critical)	**7**	Exposure index
3	*ALERT* message	**8**	Shutter value (° or seconds)
4	Center mark	**9**	Sensor frame rate
5	White balance	**10**	Camera status (here: Standby)

Surround mask

If surround view is active, the non-recorded area is masked. Style options for the mask are: Black line, colored line, or semitransparent mask (as shown here).

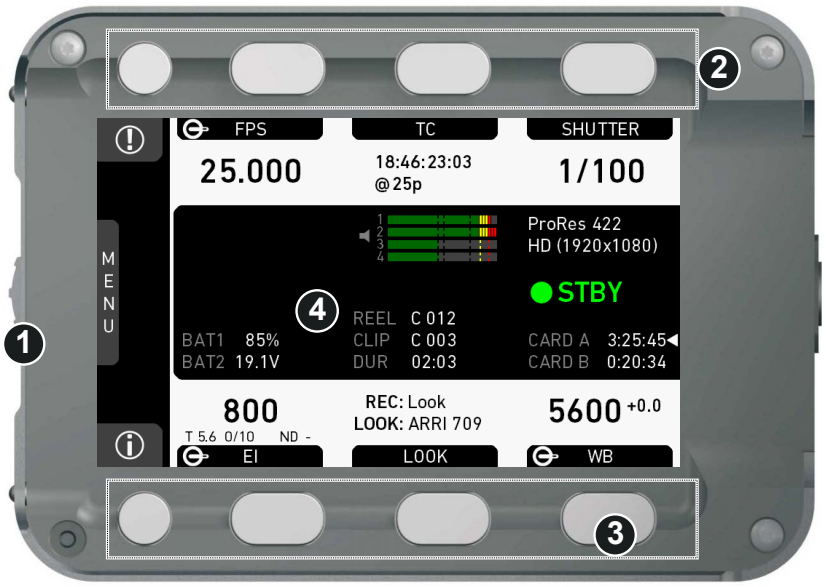


Center mark

Marks the image center. Can be set to *Off, Cross, Dot* or *Small Dot.*

11.7 User monitor

Screen buttons and jogwheel



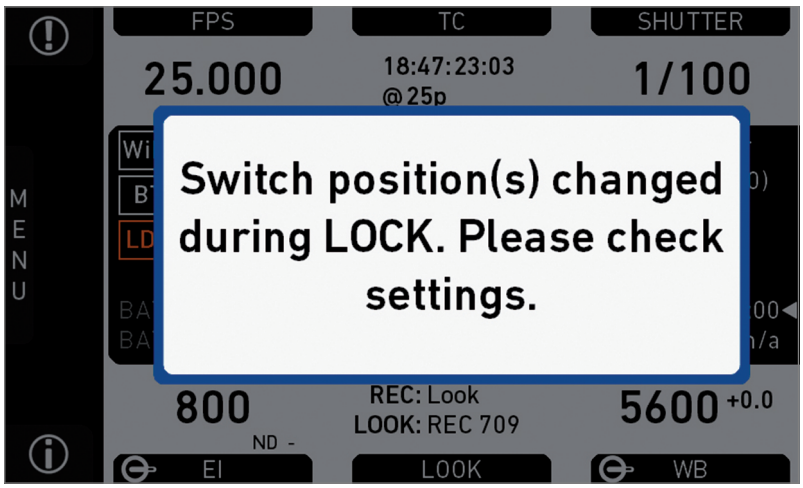
There are eight screen buttons, four above (2) and four below (3) the display (4). Their function depends on the screen content (4) and is labeled directly above or below each button.

Unlabeled buttons have no function for that screen. A grayed-out label means: function currently not available. Via jogwheel (1), you can:

- Scroll or navigate through lists and menus.
- Change values (by scrolling up or down).
- Confirm settings (by pressing the wheel).

On the home screen (4), pressing the jogwheel (1) opens the camera menu.

11.8 Message popups

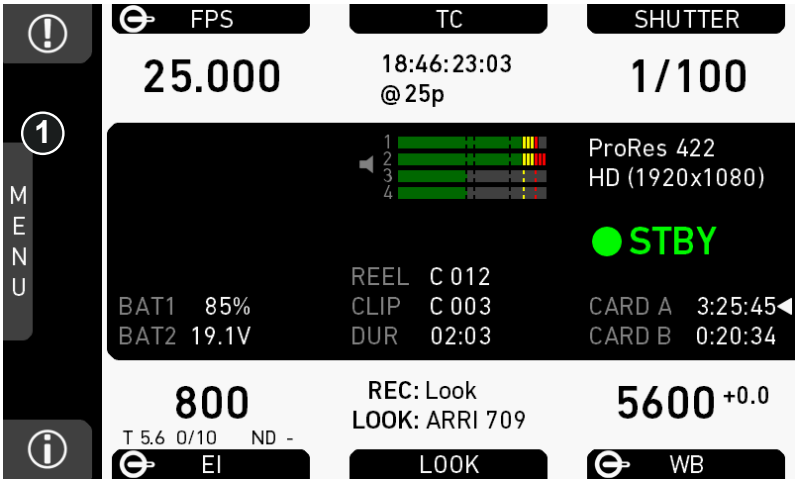


Message popups appear on the monitor to inform the user about system events and potential problems requiring the user's attention.

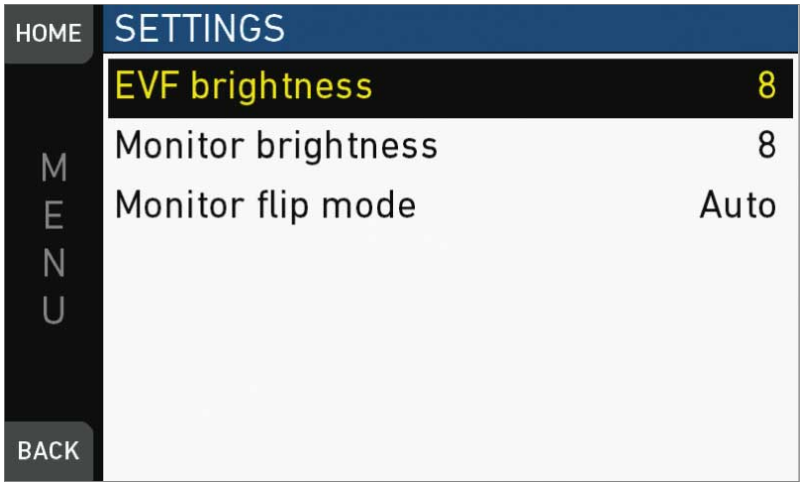
Messages of informative character have a blue frame, while messages of attentive character have an orange or red frame, depending on their severity.

Press any screen button or the wheel to dismiss a popup.

11.9 Adjusting the monitor brightness



1. Open the home screen.
2. Via jogwheel (1), open *MENU* > *Monitoring* > *EVF/Monitor* > *Settings*.



3. Scroll to *Monitor brightness*.
4. Press the jogwheel.
5. Adjust the brightness by scrolling to the required value: 1 (= minimum) to 10 (= maximum).
6. Press *HOME*.

12 Overlay menu

The overlay menu offers a reduced set of camera parameters for adjustment. When activated, it is visible in the top section of the image on the MVF-1 monitor and EVF and on any SDI output which has SDI processing activated. The overlay menu is a quick way to change the following camera settings:

- Sensor FPS
- Shutter (Shutter Angle / Exposure Time)
- Exposure Index
- ND filter
- White Balance

Sensor FPS, Shutter and White Balance cannot be changed manually, but in the range of their user predefined lists. ND filter is changed instantly and requires no additional confirmation step.

A white frame marks the selected parameter. A yellow font means it is in edit mode and can be changed.

For detailed instructions on how to activate and operate the overlay menu, see the following sections.

User button

1. Assign a user button with "Overlay menu".
2. Activate the overlay menu by pressing the user button.
3. Select a parameter with the jogwheel of the MVF-1.
4. Start editing the parameter by pressing the jogwheel.
5. Select the new parameter value with the jogwheel.
6. Confirm the new value by pressing the jogwheel.
7. If required, repeat steps 3-6 for other parameters.
8. Exit the overlay menu by pressing the user button.

13 Web remote

AMIRA has a web remote function for full remote control of the camera with a web browser. It requires a connection to the camera via WiFi or with a RJ-45 LAN cable.

Note: Web remote requires an advanced or premium license.

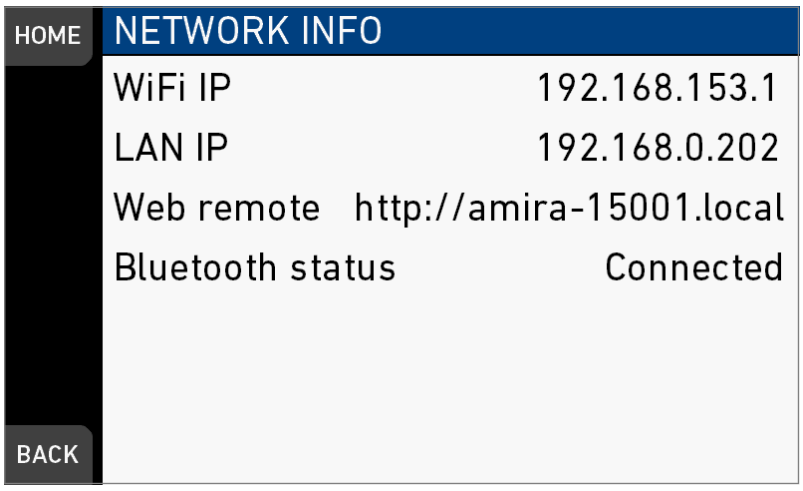
The web remote has been tested with the following platforms and browsers:

Desktop browsers	Google Chrome 45 Mozilla Firefox 44
iOS	Safari 9.2.1
Android	Google Chrome Mobile 45

Open a web browser and enter the URL: http://amira-xxxxx.local (replace xxxxx with the 5-digit serial number of your camera).

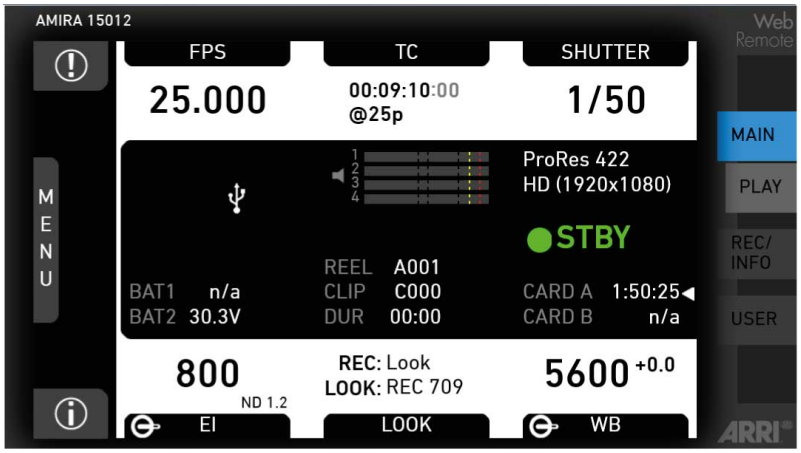
NOTICE

To use the web remote function via this URL, the device must support zero-configuration networking (zeroconf), e.g. through Apple Bonjour. Without zeroconf, the webremote can be reached via the IP adress of the network (WiFi or LAN IP). The WiFi IP is fixed to 192.168.153.1. The LAN IP can be either assigned from a DHCP server or configured manually, and can be checked with an MVF-1 via the INFO > Network info screen.



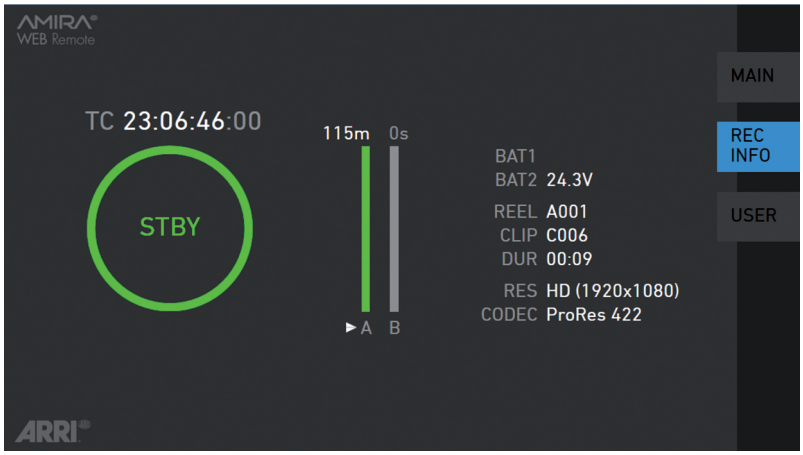
MAIN*, *PLAY*, *REC INFO* and *USER

Web remote is divided into the following four sections:



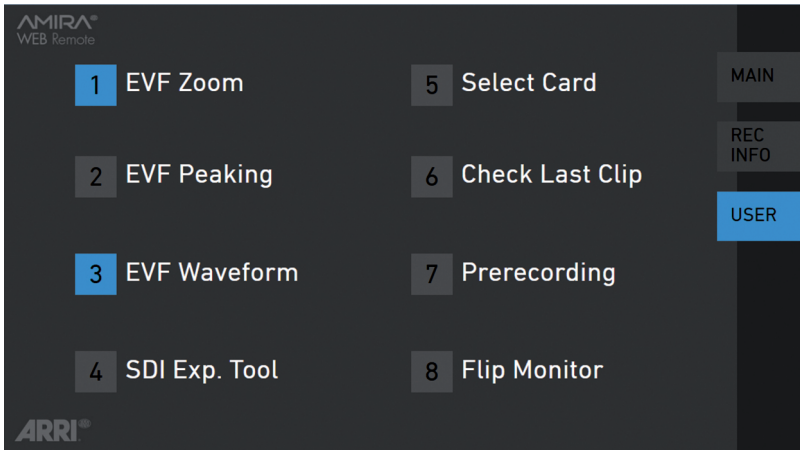
MAIN: Contains the same UI as the camera monitor (no live screen). Click/tap the screen button tabs to enter a screen/trigger a function. Menu items can be clicked/ tapped directly.

PLAY: Starts playback on the camera. Provides the same controls as the MVF-1, but no video signal.



REC INFO: Contains info on the main recording relevant parameters, plus a *REC* button. Click the big circle icon to start/stop recording.

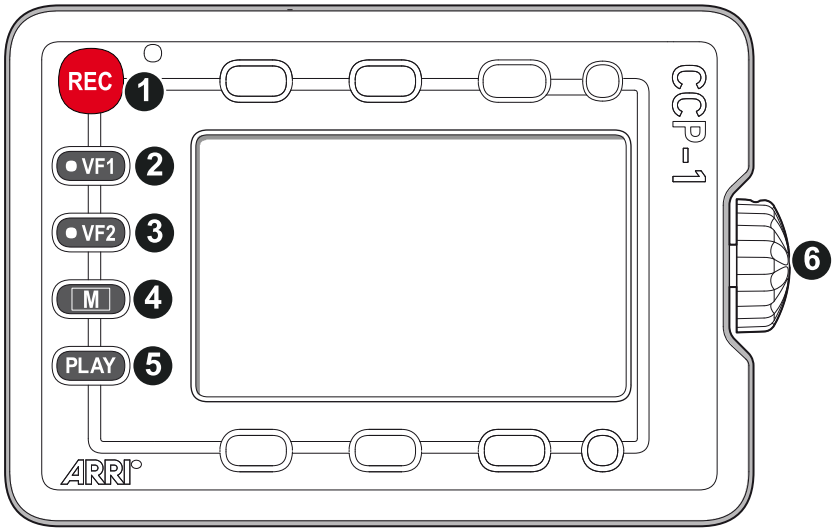
Note: Rec status may respond with a little delay depending on network speed.



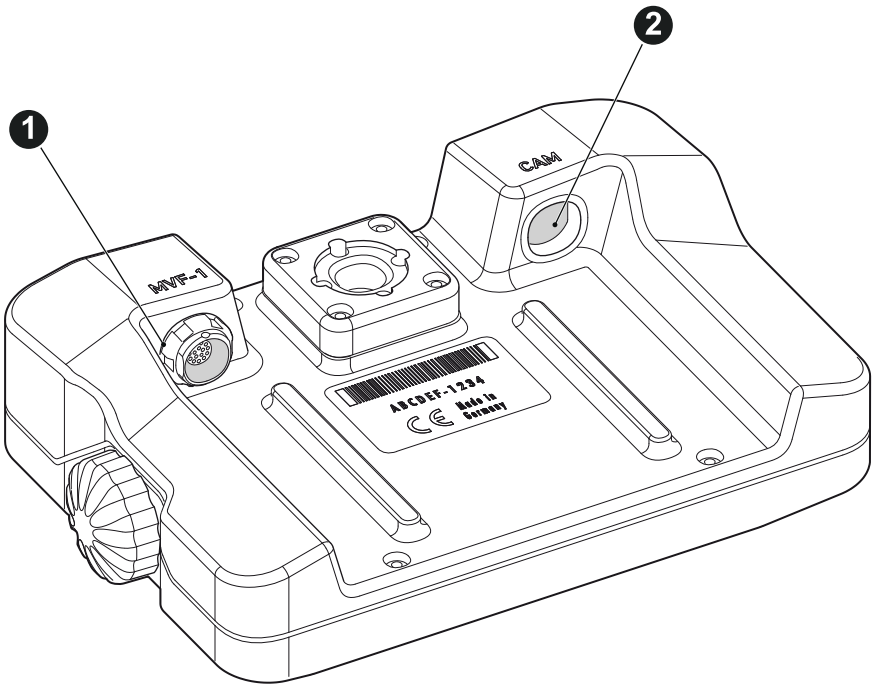
USER: Shows configuration of user buttons and allows to trigger them. Press number icons to trigger user buttons.

14 CCP-1

The Camera Control Panel-1 (CCP-1) is a standalone control panel, containing the display and a subset of buttons of the MVF-1. It shows the same images, and the buttons mimic the behavior of the equivalent buttons of the MVF-1. It can be used as the only control panel or with a MVF-1 daisy-chained to it.



1	Recording button	**4**	Monitor button
2	VF-1 user button	**5**	Play button
3	VF-2 user button	**6**	Jogwheel



1 MVF-1 connector
2 CAM connector

Connect CCP-1 to the HDMI connector on camera side.

When it is used alone with the camera, it always shows an image.

When a MVF-1 is chained to the CCP-1, the MVF-1 will show an image in the EVF, but only one of the two monitors, either of the MVF-1 or the CCP-1 is active.

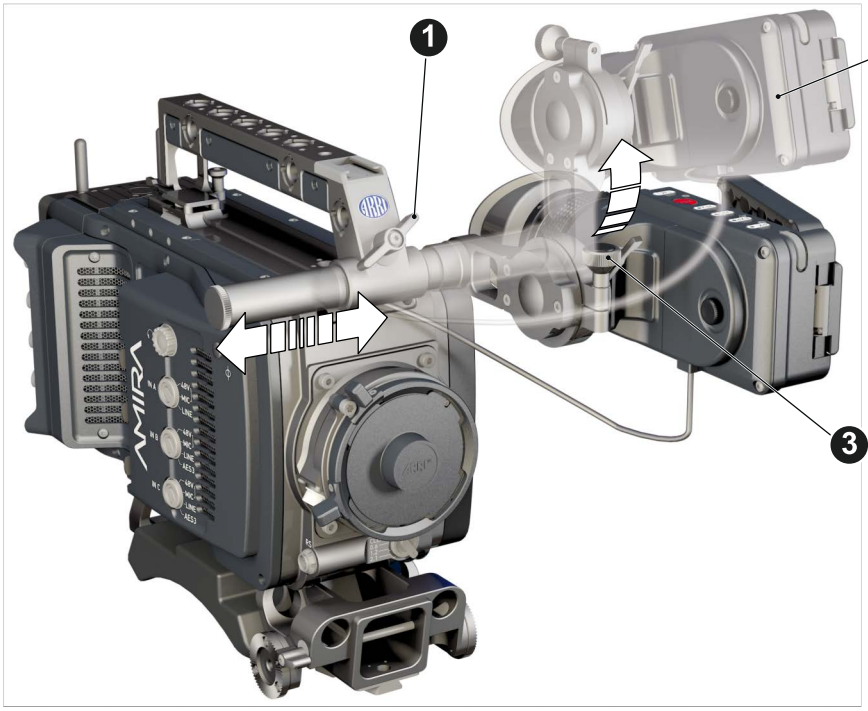
- If the monitor of the MVF-1 is closed, the CCP-1 is activated.
- If the monitor of the MVF-1 is opened, the monitor will be activated.

► Activate the MVF-1 by pressing a screen button on the MVF-1.

► Activate the CCP-1 by pressing any button except "REC" button on the CCP-1.

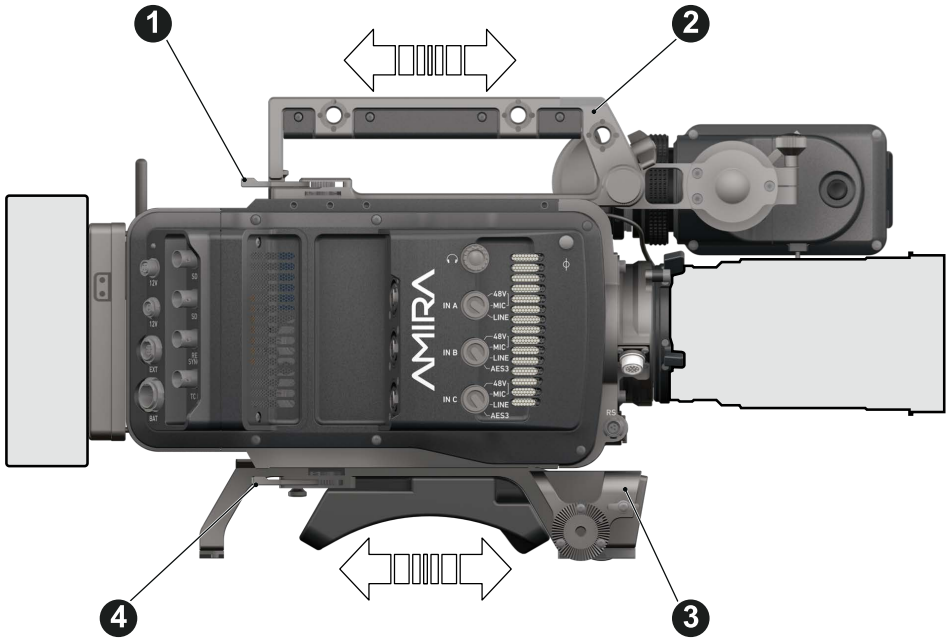
15 Camera preparation

15.1 Adjusting the viewfinder



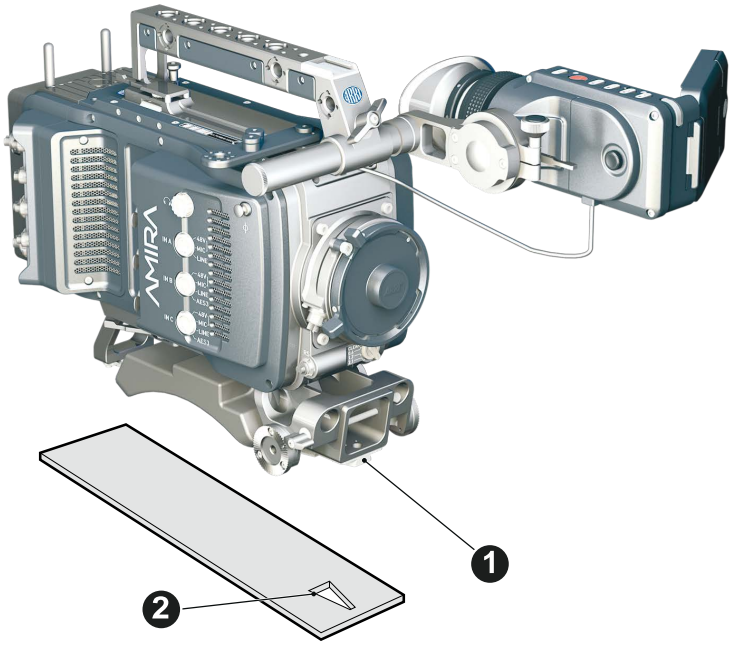
1. Slightly loosen the clamp (1) to move the viewfinder (2) left/right and up/down.
2. Unclamp the hinge (3) to swivel the viewfinder horizontally.
3. Close all clamps (1, 3) when the viewfinder is in the desired position (2).

15.2 Balancing the camera weight



1. Unlock (4) and slide the base adapter (3) until the camera is balanced.
2. Close the clamp (4).
3. Unclock (1) and slide the handle (2) until the camera is balanced.
4. Close the clamp (1).

15.3 Mounting to a wedge plate

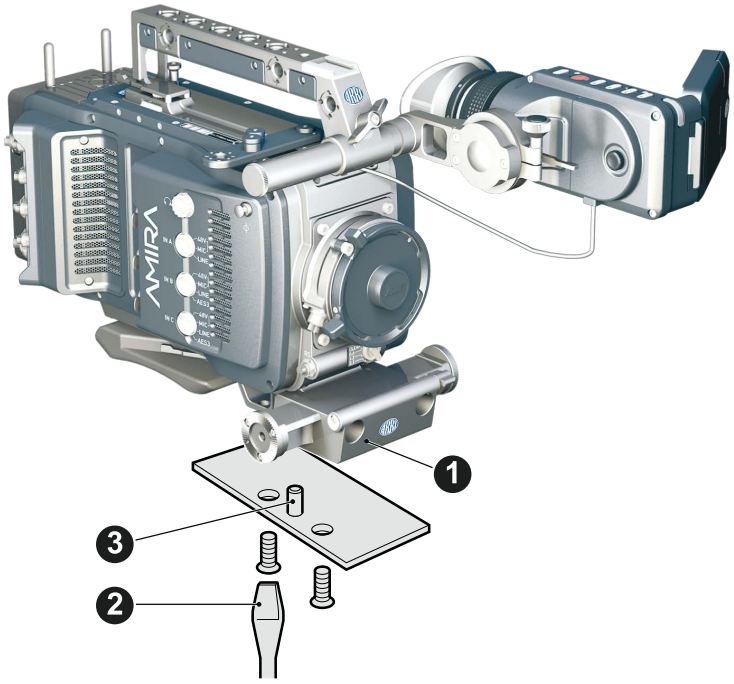


1. For mounting to a wedge plate, use the WPA-1 wedge plate adapter.
2. Open the quick-release base plate.
3. Place the adapter (1) into the quick-lock plate slighty behind the connection points.
4. Slide the camera forward until the quick-lock audibly locks (2).
5. **Note:** The lock must be closed.

15.4 Mounting to a bridge plate

NOTICE

Always use a flat screwdriver to connect the BPA-3 to a bridge plate. Never use a coin. A coin does not deliver enough force to ensure a proper lock.



1. For mounting to a bridge plate, use the BPA-3 bridge plate adapter.
2. Place the bridge plate unter the adapter (1).
3. Adjust the bridge plate's nose (3) to the adapter's aperture.
4. With a flat screwdriver (**no** coin!), attach the screws to the adapter and tighten (2).
5. **Note:** Always ensure a proper lock.

16 Assembly and retrofits

NOTICE

To avoid damage while assembling and retrofitting, always place the camera on a padded, firm, flat and level surface.

Work on an unpowered camera only.

16.1 Battery adapter

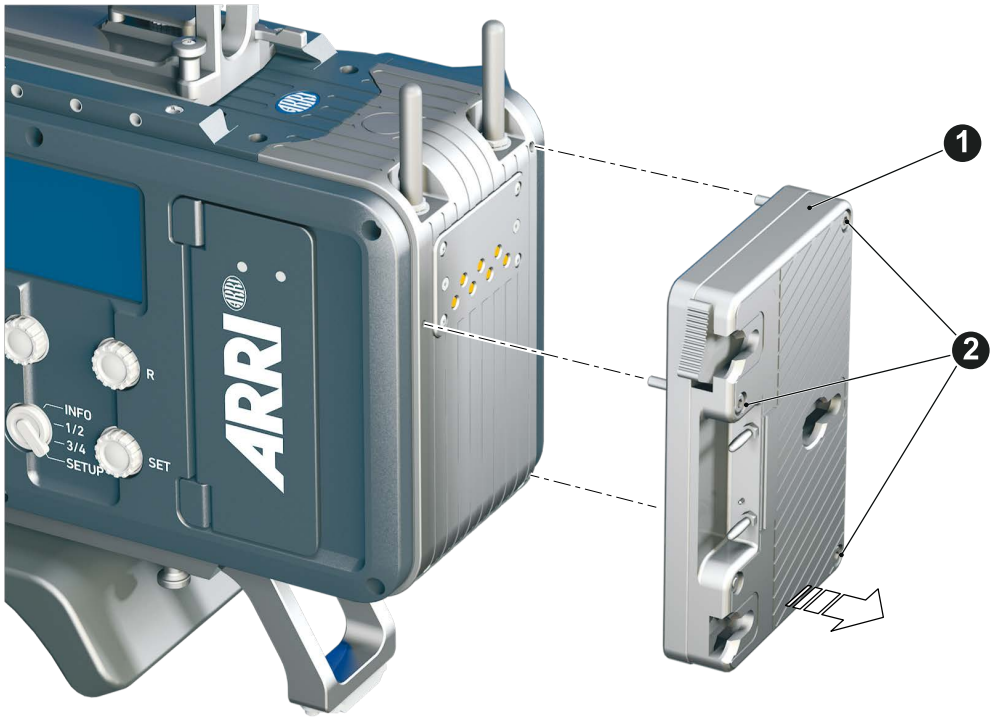
Tools needed

- 2.5 mm Allen key

Mounting

1. **Note:** The illustration shows a V-Lock adapter.
2. Switch off; interrupt the power supply.
3. Pin the battery adapter (1) to the camera.
4. With a 2.5 mm Allen key, fasten all three screws (2) until the adapter fits tightly.

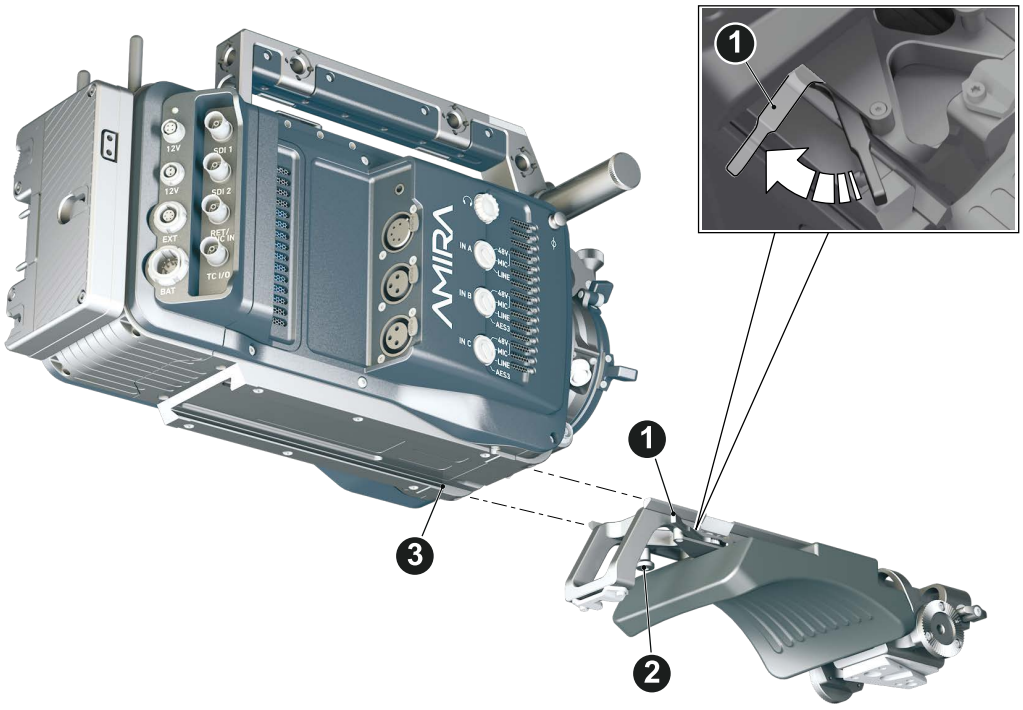
Unmounting



1. **Note:** The illustration shows a Gold Mount adapter.
2. Switch off; interrupt the power supply.
3. With a 2.5 mm Allen key, unfasten all three screws (2).
4. Remove the battery adapter (1).

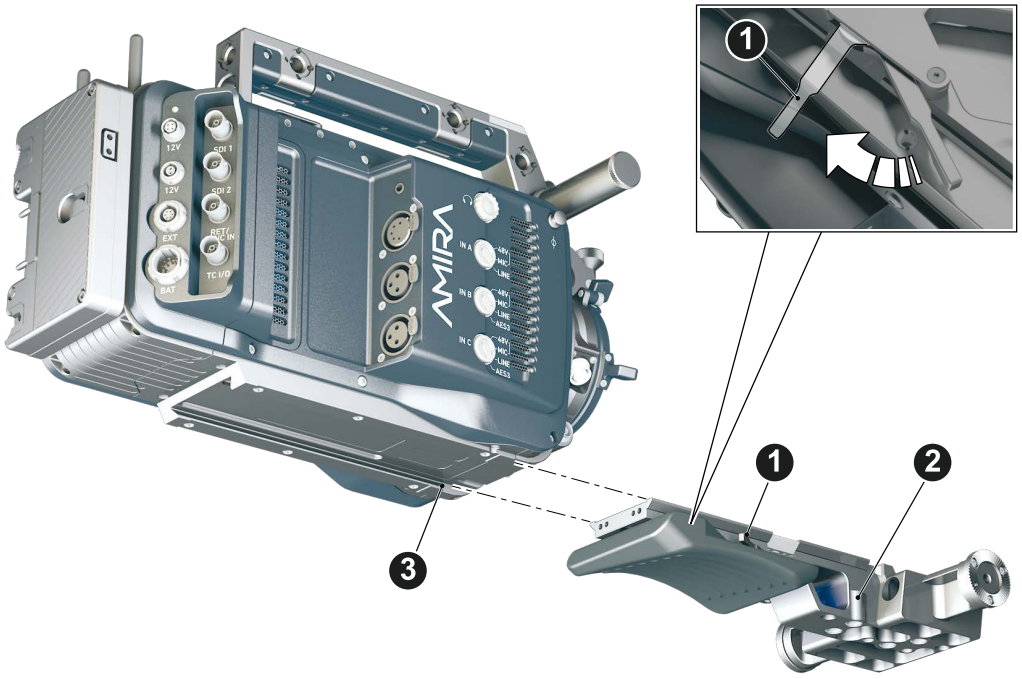
16.2 Base adapter

Mounting



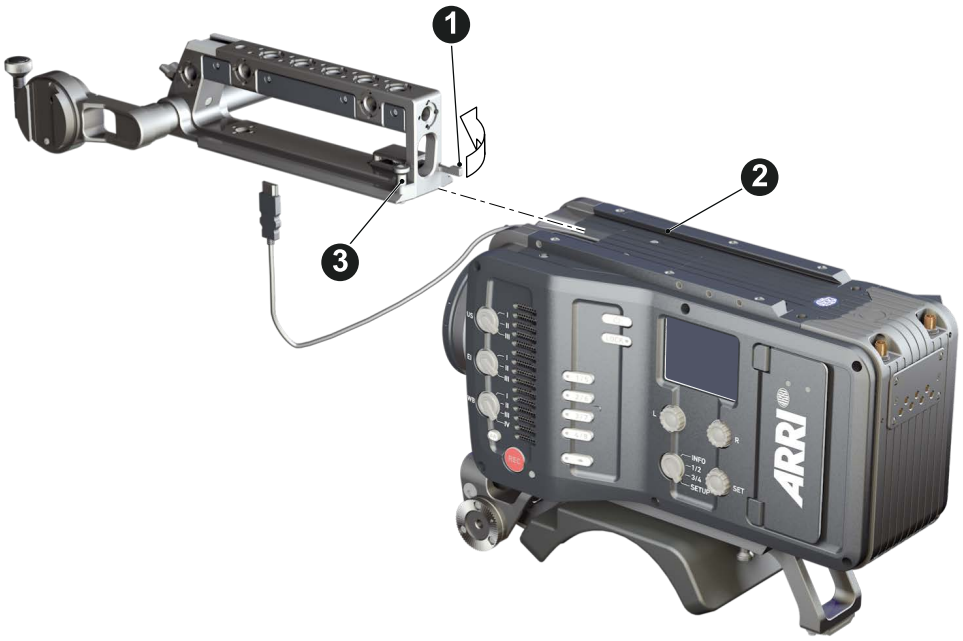
1. **Note:** The illustration shows a WPA-1.
2. Open the clamp (1).
3. Slide the adapter under the camera (3).
4. **Note:** The safety pin (2) must audibly lock.
5. Close the clamp (1).

Unmounting



1. **Note:** The illustration shows a BPA-3.
2. Open the clamp (1).
3. With the safety pin pulled (2), slide the adapter off the camera (3).

16.3 Camera handle



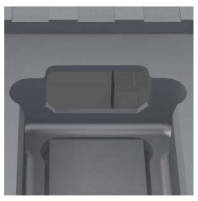
1. Open the clamp (1).
2. Slide the handle onto the camera (2).
3. **Note:** The safety pin (3) must audibly lock.
4. Close the clamp (1).
5. **To unmount:** Open the clamp (1).
6. With the safety pin pulled (3), slide the handle off the camera (2).

16.4 Viewfinder and EVF cable

Tools needed

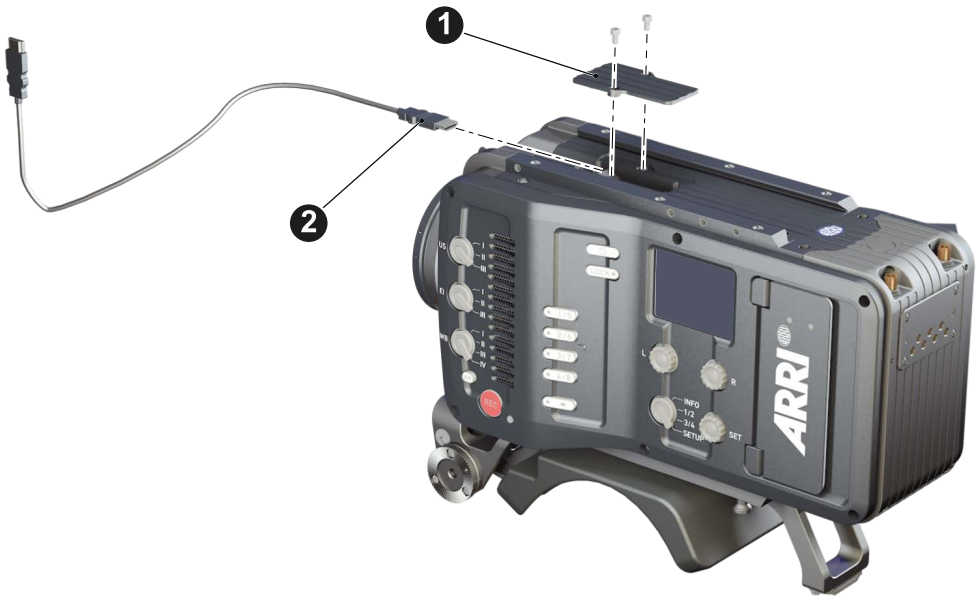
- 2 mm Allen key

EVF port



Via original AMIRA EVF cable, this port connects the camera to the multi-viewfinder.

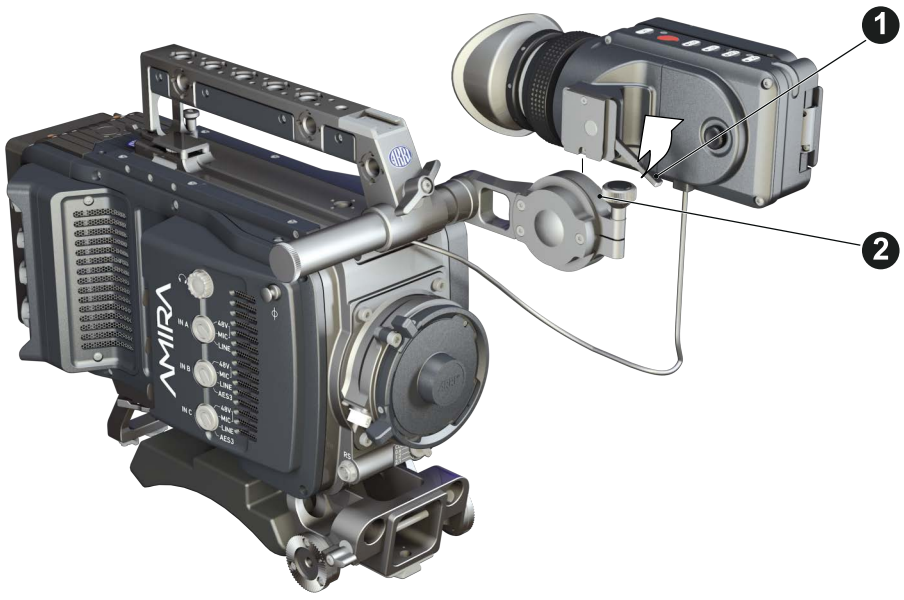
Changing the EVF cable



1. **Note:** Use original AMIRA EVF cables only.
2. Place the camera bottom-down.
3. Unmount the camera handle. See page 61.
4. With a 2 mm Allen key, unscrew and remove the lid (1).
5. Either: Connect the cable (2) to the EVF port.
6. Or: Disconnect the cable (2).
7. Reattach lid (1) and camera handle.

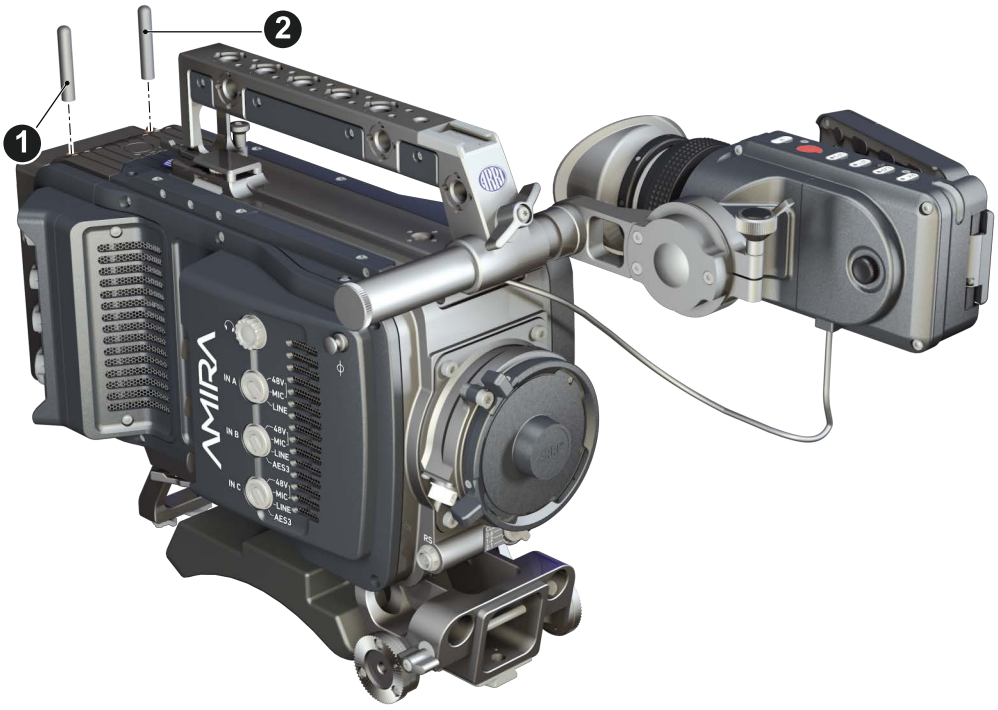
Changing the viewfinder

1. Switch off; interrupt the power supply.
2. **Note:** Use original AMIRA EVF cables only.
3. Connect a EVF cable to the camera. See page 62.
4. With your fingers, unscrew and remove the viewfinder's lid (1).
5. Either: Connect the cable (2) to the EVF port.
6. Or: Disconnect the cable (2).
7. Reattach the lid (1).



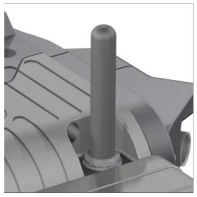
8. Open the clamp (1).
9. Either: Dovetail the viewfinder to the bracket (2).
10. Or: Unbracket (2) and remove the viewfinder.
11. Close the clamp (1).

16.5 Antennas



1. With your fingers, thread the antennas for WiFi (1) and Bluetooth (2) onto the camera.
2. **To unmount:** Unthread the antennas (1, 2) with your fingers.

WiFi



Antenna for WiFi signal according 802.11g. Used for remote camera access.

Bluetooth

Antenna for Bluetooth signal. Used for wireless audio monitoring and comment channel return with Bluetooth headset. Supports Handsfree and A2DP protocols.

17 Licensing and updating

17.1 Camera update

The camera supports the installation of SUP software update packages. Check www.arri.com for the latest available SUP version.

To install an update, follow the instructions coming with the SUP.

17.2 Licensing

You can further enhance the camera capabilities through licensed features available for online purchase. Visit the ARRI license shop at http://alshop.arri.de and follow the instructions for purchasing and downloading license keys.

License keys are linked to each camera's serial number and cannot be transferred from one camera to another.

NOTICE

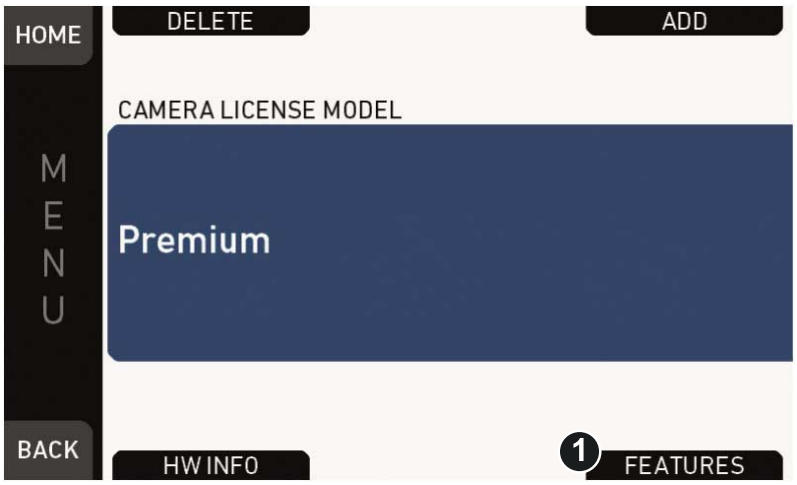
Licenses are also available as timed temporary licenses. After installation, the license is valid for a defined period past the installation time. After this period, the license becomes invalid.

A temporary license shows Valid until: YY-MM-DD HH:MM:SS in the licensed features screen.

The active camera license model (incl. contained features) is available under: *Menu* > *System* > *Licensed feature*.

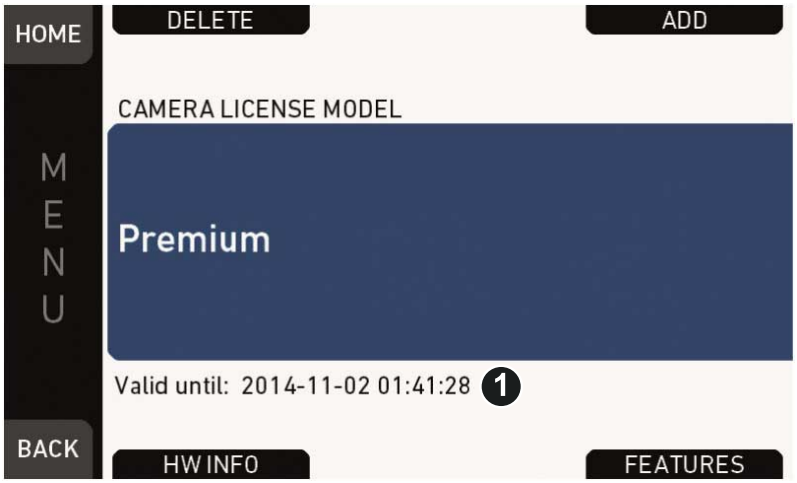
For full instructions, see the User Manual.

17.2.1 License bundles



To view the features contained in the active license bundle, press *FEATURES* screen button (1).

Temporary licenses



Licenses are also available as temporary real-time licenses. After installation, the license is valid for a defined period past the installation time. After this period, the license becomes invalid.

A temporary license shows *Valid until: YY-MM-DD HH:MM:SS* (1) in the licensed features screen and in the *FEATURES* subscreen.

18 Appendix

18.1 Technical data

Camera info

Dimensions	Length	309 mm
	Height	149 mm
	Width	139 mm
Weight		4.1 kg / 9 lbs (camera body with PL mount)
Sensor		35 mm format ARRI ALEV III CMOS with Bayer pattern color filter array
Sensor photo sites	ProRes:	Resolution:
	S16 HD	1600x900
	HD	2880x1620
	2K	2867x1613
	3.2K	3200x1800
	4K UHD	3200x1800
Shutter		Electronic shutter, 5.0°-356.0°
Exposure latitude		14+ stops over the entire sensitivity range from EI 160 to EI 3200 as measured with the ARRI Dynamic Range Test Chart (DRTC-1)
Exposure index		adjustable from EI 160-3200 in 1/3 stops EI 800 base sensitivity
ND filters		Built-in motorized ND filters 0.6, 1.2, 2.1
Supported lens mounts		Steel PL mount with ENG connector and LDS

	Titanium PL mount with L-Bus connector and LDS (**Note:** LBUS motors are not supported by AMIRA) EF mount PL mount with Hirose connector and LDS B4 mount with Hirose connector
Recording media	CFast 2.0 memory cards
Sound level	< 20 dB(A) at standard frame rates
Operating temperatures	-20 to +50 °C (-4 to +122 °F) @ 95% r.h. non-condensing
Environmental	Splash and dust-proof through sealed electronics
Wireless interfaces	Built-in WiFi and bluetooth modules

Recording info

Target resolutions	ProRes:	Resolution:
	S16 HD	1920x1080
	HD	1920x1080
	2K	2048x1152
	3.2K	3200x1800
	4K UHD	3840x2160
Recording codecs		ProRes 422 LT, 422, 422 HQ, 4444, 4444 XQ MPEG-2 HD

Maximum recording frame rates

Camera settings		**Maximum frame rate in fps**	
Resolution	**Codec**	**CFAST 2.0 60 GB**	**CFAST 2.0 128 GB**
S16 HD	ProRes 422 LT	200	200
	ProRes 422	200	200
	ProRes 422 HQ	200	200
	ProRes 4444	137	200
	ProRes 4444 XQ	91	120
HD	ProRes 422 LT	200	200
	ProRes 422	200	200
	ProRes 422 HQ	200	200
	ProRes 4444	137	200

	ProRes 4444 XQ	91	120
	MPEG-2 HD	59.940	59.940
2K	ProRes 422 LT	200	200
	ProRes 422	200	200
	ProRes 422 HQ	181	200
	ProRes 4444	120	200
	ProRes 4444 XQ	80	120
3.2K	ProRes 422 LT	60	60
	ProRes 422	60	60
	ProRes 422 HQ	60	60
	ProRes 4444	49	60
	ProRes 4444 XQ	30	30
4K UHD	ProRes 422 LT	60	60
	ProRes 422	60	60
	ProRes 422 HQ	51	60
	ProRes 4444	34	60
	ProRes 4444 XQ	22	30

Electrical data

DC power input	10.5 to 34 V
DC power output	10.5 to 12 V (RS: 24 V) / 2.0 A

Audio data

External interfaces	2x 3-pin XLR in (In B, C), 1x 5-pin XLR in (In A), 1x 3.5mm TRS out
Input formats	Mic level (optional phantom power) Line level AES3 EBU (32, 44.1, 48, 96 kHz) *Note: In B, C only*
Recording format (embedded in video file)	Linear PCM, 24 bit 48 kHz
Number of recording channels	4+1
Gain adjustment	0 - +30 dB independently per input
Line input max. level	+8 / +24* dBu, correlating to 0 dBFS *requires IOAU2 audio board
Limiter/Auto level features	-6 dBFS threshold 3ms attack time 360ms release time ∞:1 ratio
Metering	From -50 to 0 dBFS

	Markers at -20, -18 and -9 dBFS Warnings from -5 dBFS (yellow) and -2 dBFS (red) to 0 dBFS Input clipping indication through red frame around audio meter
Internal test tone generator	1 kHz sine @ -9 dBFS / -18 dBFS / -20 dBFS

18.2 MPEG-2 Notice

This product contains MPEG-2 functionality.

ANY USE OF THIS PRODUCT IN ANY MANNER OTHER THAN PERSONAL USE THAT COMPLIES WITH THE MPEG-2 STANDARD FOR ENCODING VIDEO INFORMATION FOR PACKAGED MEDIA IS EXPRESSLY PROHIBITED WITHOUT A LICENSE UNDER APPLICABLE PATENTS IN THE MPEG-2 PATENT PORTFOLIO, WHICH LICENSE IS AVAILABLE FROM MPEG LA; LLC; 4600S. ULSTER ST., SUITE 400, DENVER, CO 80237.

18.3 Declarations of conformity

EU Declaration of Conformity

The product AMIRA 1 conforms to the specifications of the following European directives:

For cameras delivered before 13 June 2016:

- DIRECTIVE 1999/5/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity
- DIRECTIVE 2011/65/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (recast)

For cameras delivered from 13 June 2016:

- DIRECTIVE 2014/53/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 April 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment
- DIRECTIVE 2011/65/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (recast)

FCC Compliance Statement

Class A Statement: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

Note: This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

- **WIFI:** FCC ID: PD962205ANH or PPD-AR5B22
- **Bluetooth:** FCC ID: QOQWT32AE

Industry Canada Compliance Statement

Complies with the Canadian ICES-003 Class A specifications.

Cet appareil numérique de la Classe A est conforme à la norme NMB-003 du Canada.

This device complies with RSS-210 of Industry Canada.

Cet appareil est conforme à CNR-210 d' Industrie Canada.

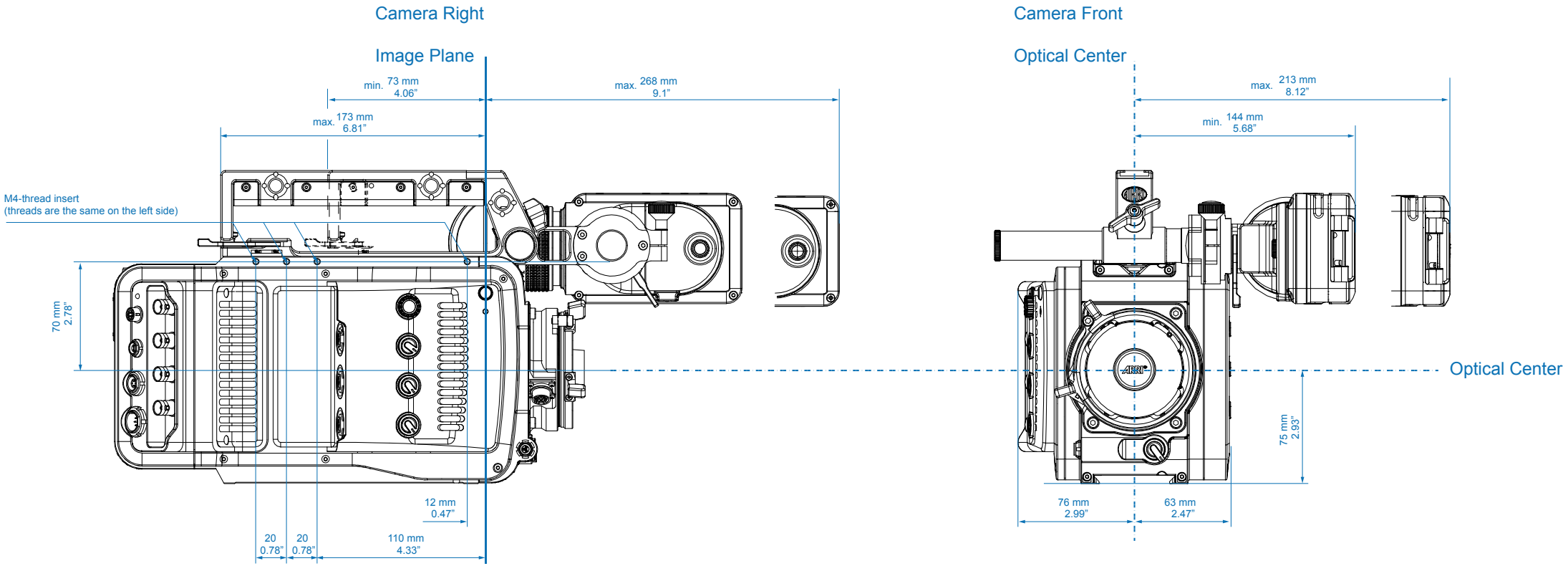
This Class A device meets all the requirements of the Canadian interference-causing equipment regulations

Cet appareil numérique de la Classe A respecte toutes les exigences du Réglement sur le matériel brouilleur du Canada.

- **WIFI:** IC ID: 1000M-62205ANH or 4104A-AR5B22
- **Bluetooth:** IC ID: 5123A-BGTWT32AE

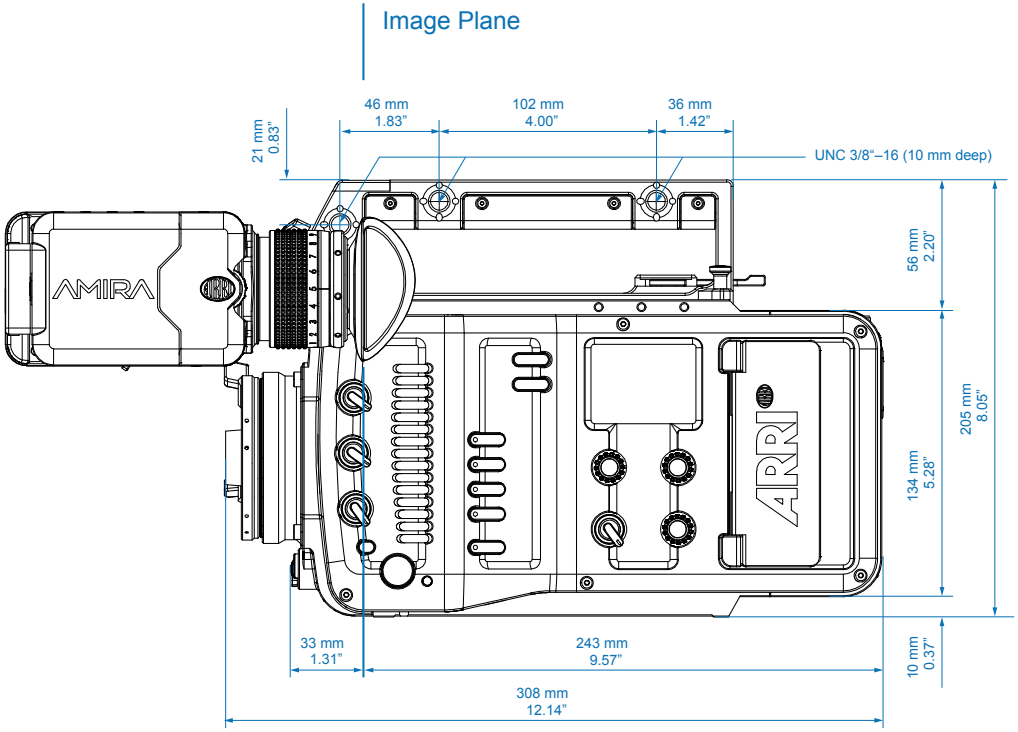
18.4 Dimensional drawings

Dimensional drawings of the camera are attached to the end of this document. They can also be downloaded from the ARRI website:
https://www.arri.com/camera/amira/downloads/

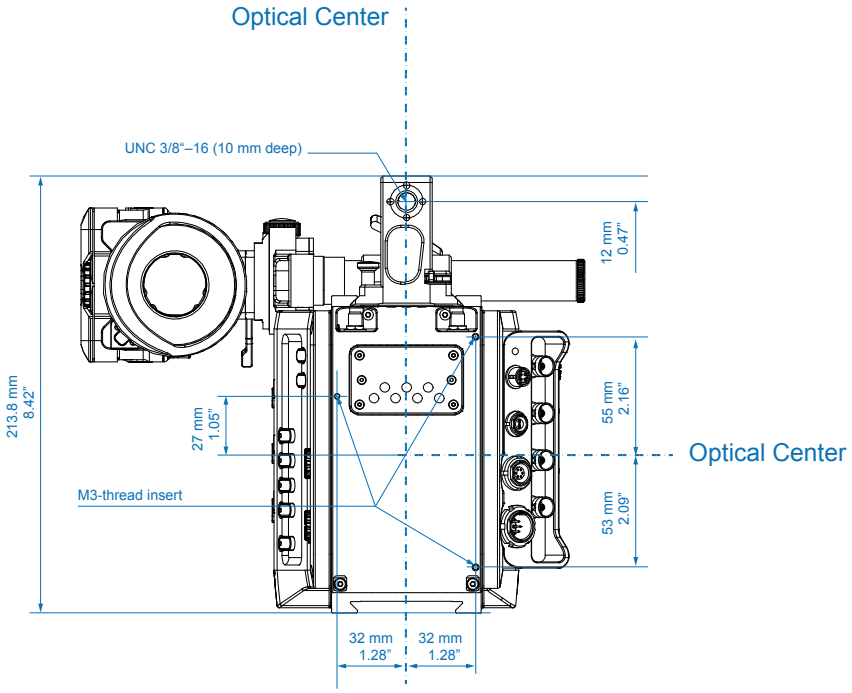


AMIRA		Length	Width	Height	Weight
	Body (with LDS PL-Mount)	309 mm - 12.1"	139 mm - 5.4"	149 mm - 5.8"	~ 4.1 kg - 9.2 lb

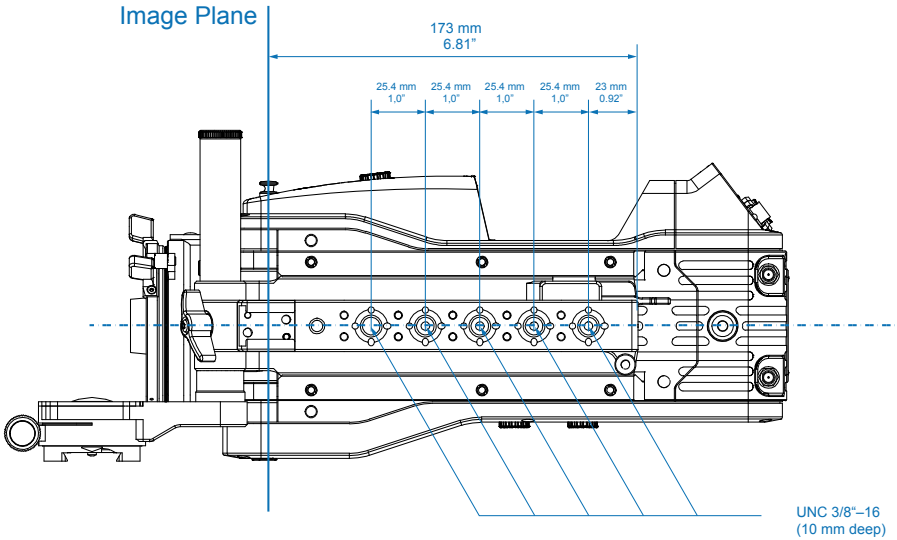
Camera Left



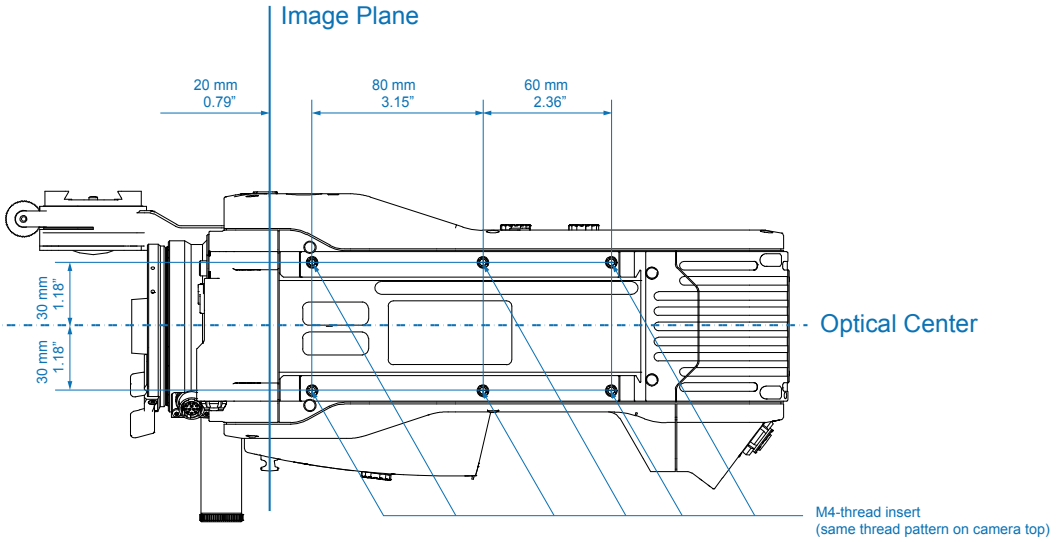
Camera Back



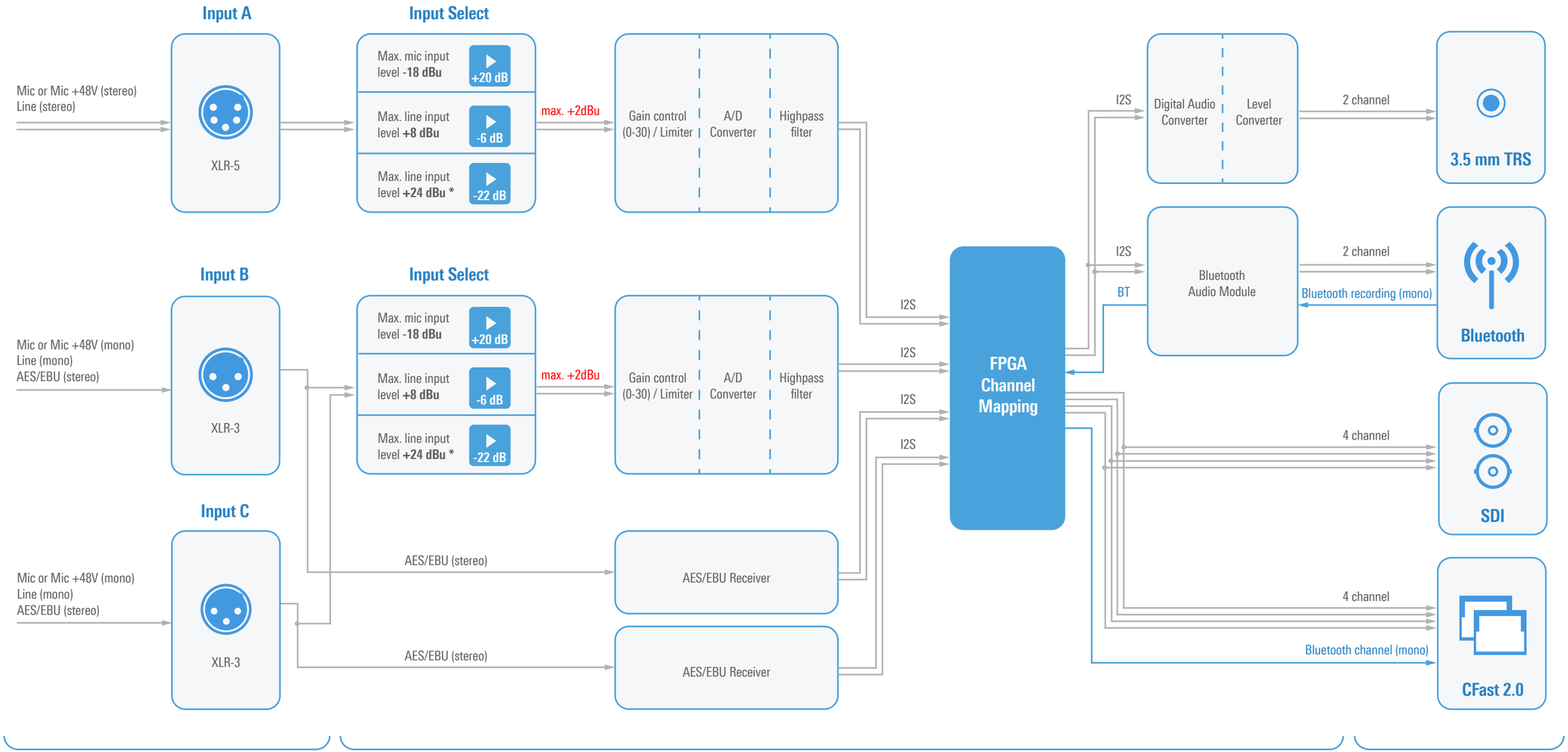
Camera Top



Camera Bottom



AMIRA Audio Block Diagram



* 24 dBu max. line input level only available with the IOAU-2 audio board.
The IOAU-1 audio board is limited to 8 dBu max. line input level.